SIEMENS

STEREO SYSTEM RS252R6

SERVICE MANUAL

INHALTSVERZEICHNIS
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Issue

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Subject to modifications

Ident-Nr. 53 5595

(D) Sicherheitsbestimmungen

Nach Servicearbeiten ist bei Geräten der Schutzklasse II die Messung des Isolationswiderstandes und des Ableitstromes bei eingeschaltetem Gerät nach **VDE 0701 / Teil 200** bzw. der am Aufstellort geltenden Vorschrift, durchzuführen!
Dieses Gerät entspricht der Schutzklasse II, erkennbar durch das Symbol ⧈ .

- **Messen des Isolationswiderstandes nach VDE 0701.**
  Isolationsmesser (U_{Test} = 500 V-) gleichzeitig an beiden Netzpolen und zwischen allen Gehäuse- oder Funktionsteilen (Antenne, Buchsen, Tasten, Zierteilen, Schrauben, usw.) aus Metall oder Metallegierungen anlegen. Fehlerfrei ist das Gerät bei einem:
  $R_{Isol} \geq 2$ MΩ bei U_{Test} = 500 V-
  Meßzeit: ≥ 1 s (Fig. 1)

Anmerkung: Bei Geräten der Schutzklasse II kann durch Entladungswiderstände der Meßwert des Isolationswiderstandes konstruktionsbedingt < 2 MΩ sein. In diesen Fällen ist die Ableitstrommessung maßgebend.

- **Messen des Ableitstromes nach VDE 0701.**
  Ableitstrommesser (U_{Test} =220 V≈) gleichzeitig an beiden Netzpolen und zwischen allen Gehäuse- oder Funktionsteilen (Antenne, Buchsen, Tasten, Zierteilen, Schrauben, usw.) aus Metall oder Metallegierungen anlegen. Fehlerfrei ist das Gerät bei einem:
  $I_{Ableit} \leq 1$ mA bei U_{Test} = 220V ≈ / Meßzeit ≥ 1 s (Fig. 2)
- Wir empfehlen die Messungen mit dem **METRATESTER 3** durchzuführen. (Meßgerät zur Prüfung elektrischer Geräte nach VDE 0701).
  Metrawatt GmbH
  Geschäftsstelle Bayern
  Triebstr. 44
  D 8000 München 50
- Ist die Sicherheit des Gerätes nicht gegeben, weil
  - eine Instandsetzung unmöglich ist,
  - oder der Wunsch des Benützers besteht, die Instandsetzung nicht durchführen zu lassen, so muß dem Betreiber die vom Gerät ausgehende Gefahr schriftlich mitgeteilt werden.

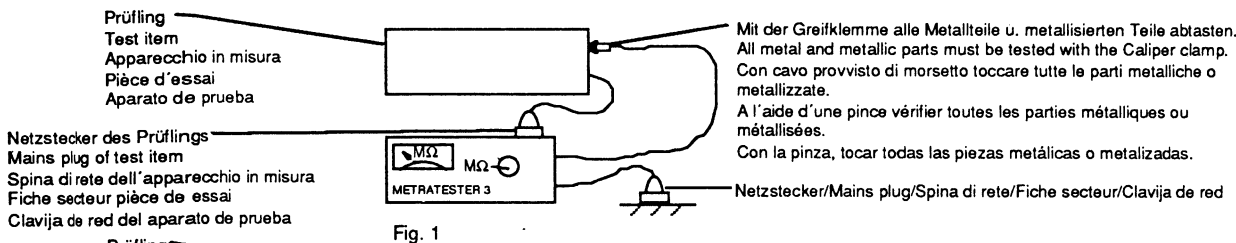


Fig. 1

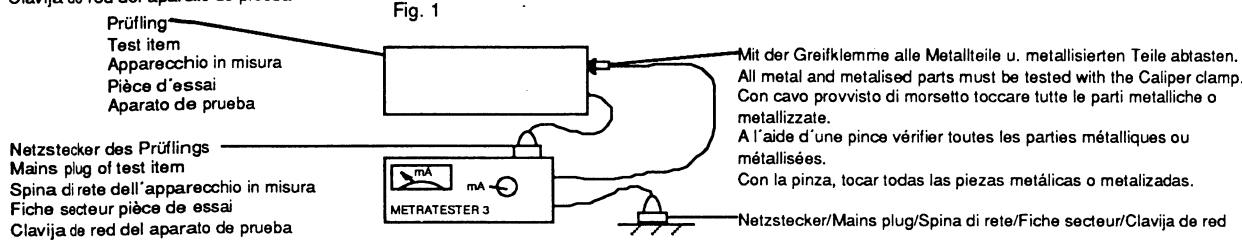


Fig. 2

Empfehlungen für den Servicefall

- Nur Original - Ersatzteile verwenden.
  Bei Bauteilen oder Baugruppen mit der Sicherheitskennzeichnung ⚠ sind Original - Ersatzteile zwingend notwendig.
- Auf Sollwert der Sicherungen achten.
  Zur Sicherheit beitragende Teile des Gerätes dürfen weder beschädigt noch offensichtlich ungeeignet sein.
- Dies gilt besonders für Isolierungen und Isolierteile.
- Netzleitungen und Anschlußleitungen sind auf äußere Mängel vor dem Anschluß zu prüfen. Isolation prüfen!
- Die Funktionssicherheit der Zugentlastung und von Biegeschutz-Tüllen ist zu prüfen.
- Thermisch belastete Lötstellen absaugen und neu löten.
- Belüftungen frei lassen.

(GB) Safety Standard Compliance

After service work on a product conforming to the Safety Class II, the insulating resistance and the leakage current with the product switch on must be checked according to VDE 0701 or to the specification valid at the installation location!
This product conforms to the Safety Class II, as identified by the symbol ⧈ .

- **Measurement of the Insulation Resistance to VDE 0701,**
  Connect an Insulation Meter (U_{Test} = 500 V-) to both mains poles simultaneously and between all cabinet or functional parts (antenna, sockets, buttons, decorative parts, etc.) made from metal or metal alloy. The product is fault free if:
  $R_{Isol} \geq 2$ MΩ at U_{Test} = 500 V-
  Measuring time: ≥ 1s, (Fig. 1)

Comment: On product conforming to the Safety class II the Insulation Resistance can be < 2 MOhm, dependent contructively on discharge resistors. In this cases, the check of the leakage current is significant.

- **Measurement of the Leakage Current to VDE 0701.**
  Connect the Leakage Current Meter (U_{Test} = 220 V≈) to both mains poles simultaneously and between all cabinet or functional parts (antenna, sockets, buttons, screws, etc.) mad from metal or metal alloy. The product is fault free if:
  $I_{Leak} \leq 1$ mA at U_{Test} = 220 V ≈
  Measuring time: ≥ 1 s, (Fig. 2)
- We recommend that the measurements are carried out using the **METRATESTER 3**. (Test equipment for checking electrical products to VDE 0701).
  Metrawatt GmbH
  Geschäftsstelle Bayern
  Triebstr. 44
  D 8000 München 50
- If the safety of the product is not proved, because
  - a repair and restoration is impossible
  - or the request of the user is that the restoration is not to be carried out, the operator of the product must be warned of the danger by a written warning.

Recommendation for service repairs

- Use only original spare parts.
  With components or assemblies accompanied with the Safety Symbol only original-spare parts are strictly to be used.
- Use only original fuse value.
- Safety compliance, parts of the product must not be visually damaged or unsuitable. This is valid especially for insulators and insulating parts.
- Mains leads and connecting leads should be checked for external damage before connection. Check the insulation!
- The functional safety of the tension relief and bending protection bushes are to be checked:
- Thermally loaded solder pads are to be suck off and re-soldered. Ensure that the ventilation slots are not obstructed.

(D) LASER - Sicherheit

Da viele Bauteile, besonders die Laserdiode, gegen statische Aufladungen empfindlich sind, müssen die MOS - Vorschriften eingehalten werden.
Die Abtasteinheit besteht aus vielen Präzisionsteilen und sollte vor hohen Temperaturen, hoher Luftfeuchtigkeit, starken Magnetfeldern, starken Erschütterungen und Staub geschützt werden.

- CD- Spieler gehören zur Gerätegruppe mit LASERN geringer Leistung.
- Nach DIN VDE 0837 bzw. IEC 825 handelt es sich um einen LASER der Klasse 1. Das besagt, die Ausgangsleistung ist konstruktiv begrenzt. Ein Betrieb der LASER-DIODE außerhalb der Abtasteinheit ist beim Betrachten des LASER-Lichtes für das Auge schädlich, da die Ausgangsleistung um ein Vielfaches höher liegt (Klasse 3 B). In diesem Fall ist das Tragen einer Laserschutzbrille zwingend vorgeschrieben.
- Durch das Linsensystem der Abtasteinheit liegt der Brennpunkt des LASER-Lichtes etwa 1,5 mm über der Fokuslinse. Da der Brennpunkt sehr tief liegt, kann der LASER mit dem bloßen Auge betrachtet werden.
- Das Betrachten des LASERS mit externen Optiken, z.B. Lupe, ist zu vermeiden, da diese den Brennpunkt auf die Netzhaut des Auges projezieren und so das Auge geschädigt werden kann.
- Das LASER-Licht kann an der Fokuslinse des Abtasters als ein dunkelroter Punkt beobachtet werden, wenn man schräg auf die Optik sieht. Die Umgebungshelligkeit soll dabei nicht zu groß sein.
- Durch das Auflegen eines Transparentpapiers auf die Fokuslinse ist der LASER-Punkt als Projektion auf die Papierrückseite gut erkennbar.
- Augenschutz bei Servicearbeiten ist nicht notwendig.
  Sicherheitsverriegelungen verhindern im Normalfall, daß der LASER bei geöffnetem Deckel arbeitet. Unter Beachtung o.g. Hinweise lassen sich die schaltungsspezifischen Sicherheitsverriegelungen ausschalten, und der LASER wird als kleiner roter Punkt sichtbar.

Sicherheitsklassen der LASER

Nach DIN IEC 76 (CO) 6 / VDE 0837 werden Laser in 5 Klassen eingeteilt.

Klasse 1
Ungefährlich für das menschliche Auge.
Maximale Ausgangsleistung z.B. bei 700 nm - 69 µW.

Klasse 2
Ungefährlich für das menschliche Auge bei kurzzeitiger Exposition durch Lidschlußreflex (Blick in den Strahl bis zu 0,24 s).
Maximale Strahlungsleistung 1 mW.

Klasse 3 A
Ungefährlich für das menschliche Auge bei Bestrahlungszeiten bis zu 0,25 s, gefährlich für das Auge bei Verwendung von optischen Instrumenten, die den Strahlungsdurchmesser verkleinern.
Maximale Strahlungsleistung 5 mW und einer Bestrahlungsstärke von 2,5 mW / cm².

Klasse 3 B
Gefährlich für das menschliche Auge und in besonderen Fällen für die Haut.
Maximale Strahlungsleistung bis 0,5 W.

Klasse 4
Sehr gefährlich für das menschliche Auge und die Haut.
Brandgefahr !
Maximale Strahlungsleistung über 0.5 W.

Das austretende Laserlicht des CD - Lichtpens entspricht der Klasse 1. Wird die Laserdiode außerhalb des Lichtpens betrieben, entspricht dieses dem Betrieb der Klasse 3 B.

(GB) LASER Safety

The MOS safety requirements must be met because many components, particularly the laser diode, are very sensitive to static electricity.
The pick-up unit incorporates many precisioon components and should therefore be protected against high temperatures, high humidity, strong magnetic fields, shocks and dust.

CLASS 1
LASER PRODUCT

- The CD Player belongs to the category of products with lowpower LASER.
- According to DIN VDE 0837 or IEC 825 it is a Class 1 LASER meaning that the output power limits are determined by the design. The LASER DIODE must not be operated outside the pick-up since the output power increases many times over (Class 3B) and causes injuries of the eye. In this case the use of a LASER protective goggles is highly prescribed.

- Due to the lens system of the LASER pick-up the focal point of the LASER light is about 1,5 mm above the focus lens. The focal point is located deep enough to allow the LASER to be looked at with unprotected eyes.
- Avoid looking at the LASER using external optical means such as, for example, a magnifying glass because the focal point will be projected onto the retina and may cause injuries of the eye.
- The LASER light appears on the focus lens of the pick-up as a darkred spot when looking at the optical system at an angle, preferrably at low ambient brightness.
- By putting a transparent paper onto the focus lens the LASER spot is projected onto the back of the sheet and is well perceivable.

- It is not necessary to protect the eyes during repair works.
  In general, built-in safety locks ensure that the LASER does not operate with open disc compartment cover. In consideration of the above instructions, the special safety locks can be made ineffective and the LASER will be visible as a small red spot.

Safety Standard Classes for the LASER

According to DIN IEC 76 (CO) 6 / VDE 0837 lasers are given five classes.

Class 1
Not dangerous for the human eye.
Maximum output power eg: at 700 nm - 69 µW.

Class 2
Not dangerous for human eye during short exposures due to the reflex time of closing the eye-lid (blinking in the beam path up to 0,24 sec).
Maximum radiation power 1 mW.

Class 3 A
Not dangerous to the human eye with a radiation time up to 0,25 secs, dangerous for the eye when using optical instruments witch reduce the diameter of the ligth beam.
Maximum radiation power 5 mW and a radiation intensity of 2,5 mW / cm².

Class 3 B
Dangerous for the human eye and, in special cases, for the skin.
Maximum radiation power up to 0,5 W.

Class 4
Very Dangerous for the human eye and the skin.
Danger for burning!
Maximum radiation power above 0,5 W.

The output of laser light from a CD light pen corresponds to Class 1. If the laser diode is operated outside the light pen, this corresponds to operation under Class 3 B.

(S) **VARNING!**
Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

(SF) **VARO!**
Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

(DK) ADVARSEL-USYNLIG LASER STRÅLING VED ÅBNING. NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDS ÆTTELSE FOR STRÅLING.

SPECIFICATIONS

AMP PART

FORMAT

Power Supply	230V/50 Hz
Output Power	10W + 10W(1 KHz, 10%, 8 ohm)
THD	1%(1 KHz, 1/10 Power)
Frequency Response	3 dB DOWN(20 ~ 20000 Hz)
Input Sensitivity	SIGNAL INPUT 250 ± 60 mV(1 KHz)
Signal-to-Noise Ratio (S/N)	50 dB(1 KHz; DIRECT/WTD)
Tone Control	
Center Frequencies	100 Hz
	10 KHz
Tone Control	± 10 dB
Channel Separation 1KHz	40 dB
Speaker Load Impedance	8 OHMS
Power Consumption	70 Watts
Weight(Net)	5.0 Kg
Dimensions	280(W) x 288(H) x 300(D)

CD PART

FORMAT

Type	Compact disk digital sudio system
Disk Used	SONY Type 4
Playing Time	Approx, 60mm one side
Diameter	120mm, 80mm(Single Type)

PICK - UP

System	Object Lense Drive Stytem
	Optical PioK-Up
Optical Source	3Beam Semiconductor Laser
Wave Length	780nm

AUDIO PART

Channels	2 Channel(stereo)
Frequency Response	20-20000Hz (3dB)(DOWN)
S/N Retio	50dB(1 KHz)(EIAJ)
T.H.D.	1%(1 KHz)
Channel Seperation	40dB(1 KHz)
Wow/Flutter	Less Than Measurable Limit

DECK PART

FORMAT

TYPE	1 MOTOR 2 DECK
HEAD	PLAYBACK : 1
	REC/PLAY : 1
	ERASE : 1
WOW/FLUTTER(JIS WTD)	0.25 %
TAPE SPEED	+3 %/ -2 %

FREQUENCY RESPONSE

PB	125Hz ~ 8KHz +3. -6 dB 1KHz = 0 dB
R/P	125Hz ~ 8KHz +3. -6 dB 1KHz = 0 dB
CORSSTALK (WITH 1KHz B.P.F.)	> 50 dB
CH SEPERATION (WITH 1KHz B.P.F.)	> 40 dB
ERASE PATIO (WITH 1KHz B.P.F.)	> 55 dB
T.H.D. (120uS)	< 1.5 %

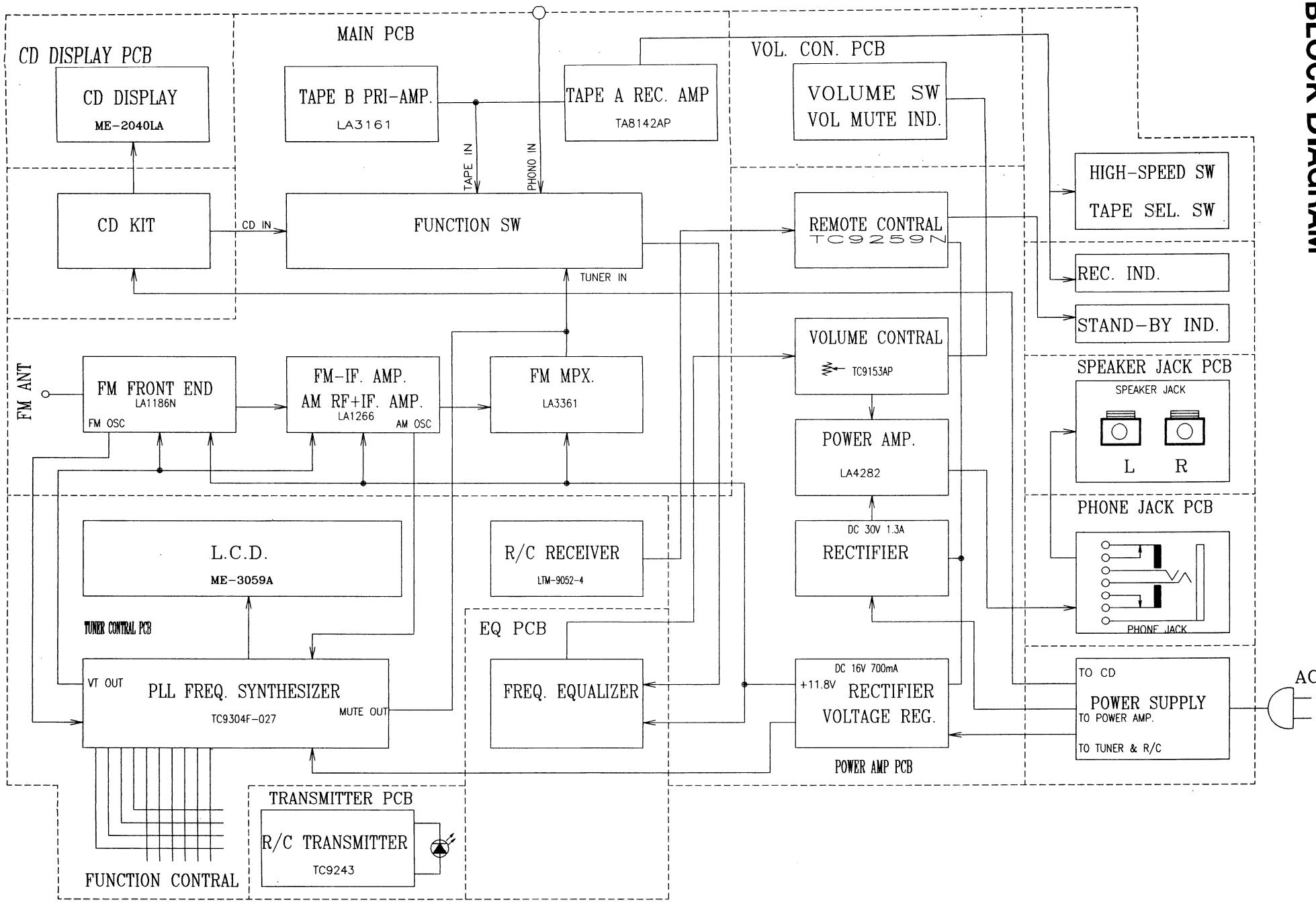
TUNER PART

FORMAT

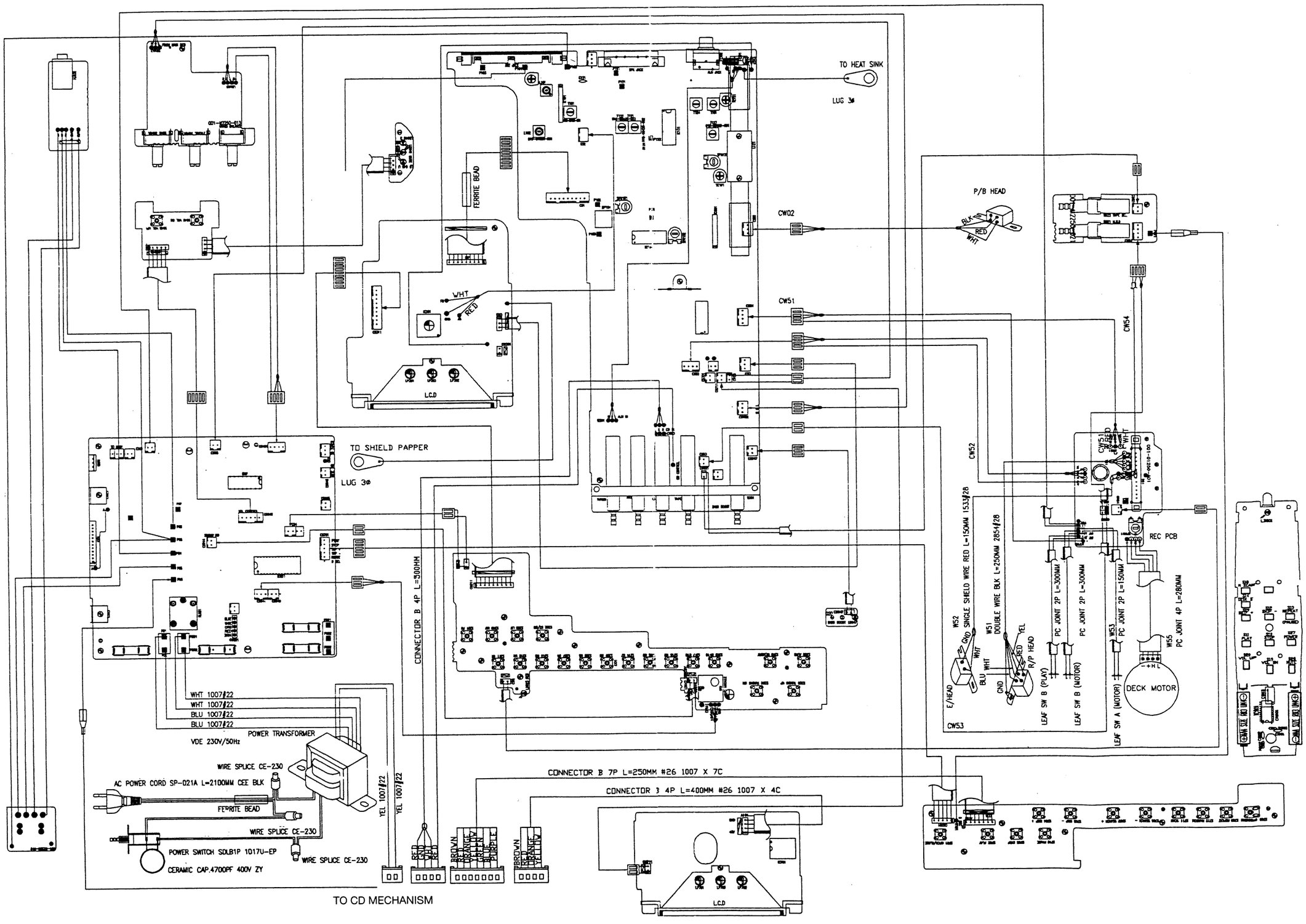
Power Supply	230V/50 Hz
Frequency Range	FM : 87.5 ~ 108 MHz
	MW : 522 ~ 1620 KHz
	LW : 153 ~ 281 KHz
Intermediate Frequency	FM : 10.7 ± 0.3 MHz
	MW: 455 ± 5 KHz
Sensitivity	FM : 26 dB
	MW: 57 dB
IF-Rejection	FM : 60 dB (90 MHz)
	MW: 40 dB (1000 KHz)
Image Rejection	FM : 30 dB (106 MHz)
	MW: 40 dB (1400 KHz)
Signal-to-Noise Ratio	FM 45 dB
	MW 35 dB
Distortion	FM 1 %
	MW 3 %
Seperation	30 dB (1 KHz)

NOTE : Specifications and design subject to possible modification without notice, due to improvements.

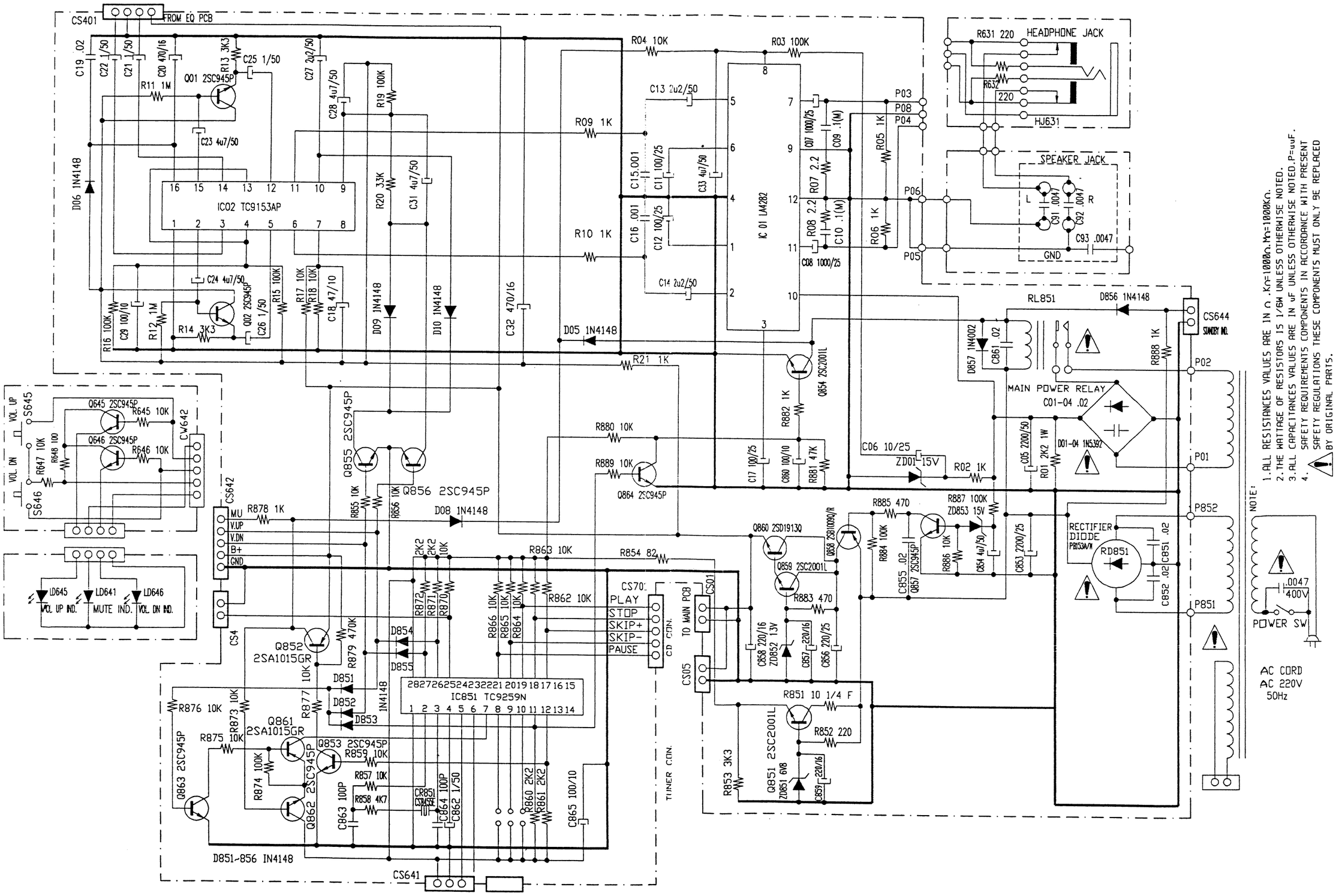
BLOCK DIAGRAM



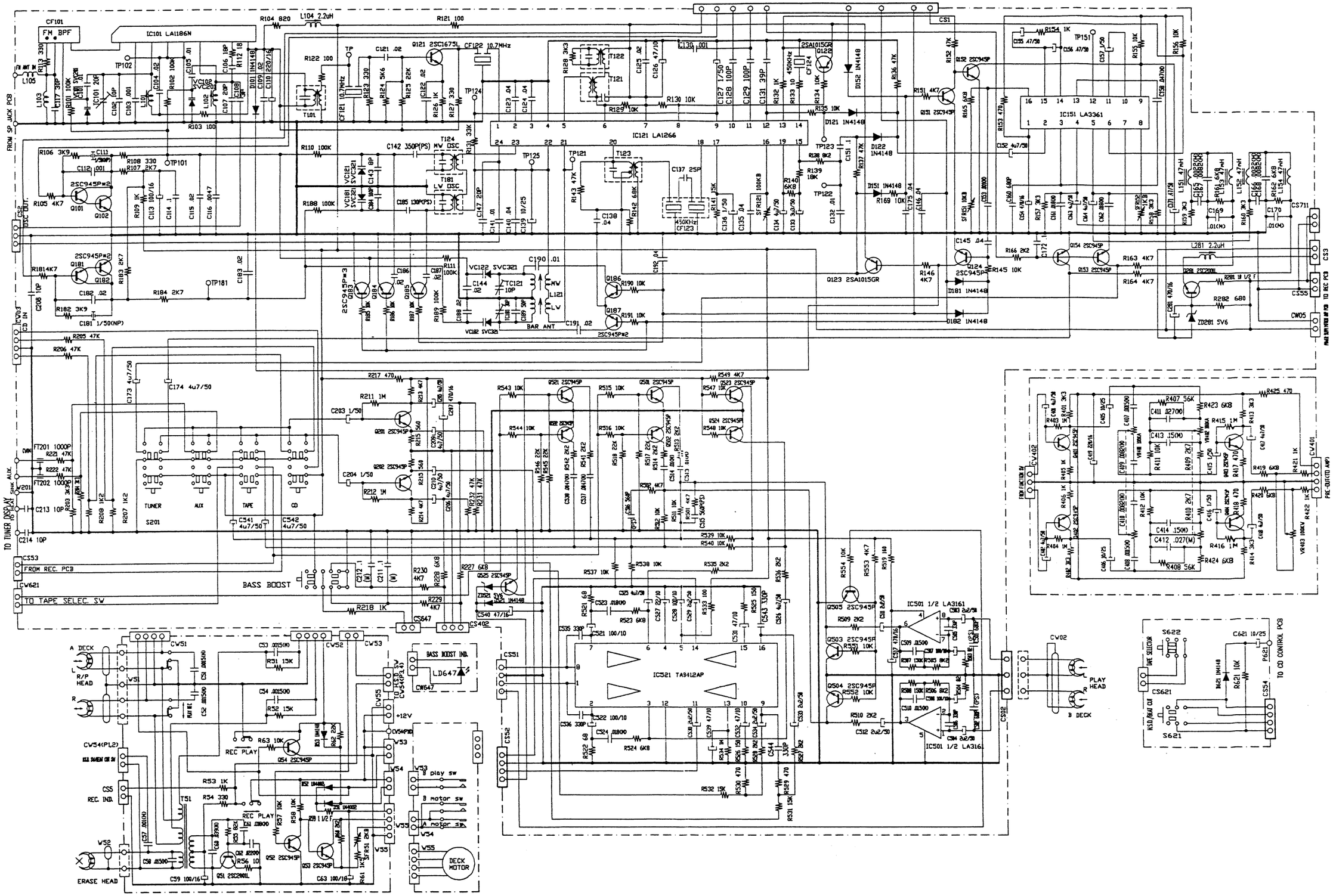
WIRING DIAGRAM



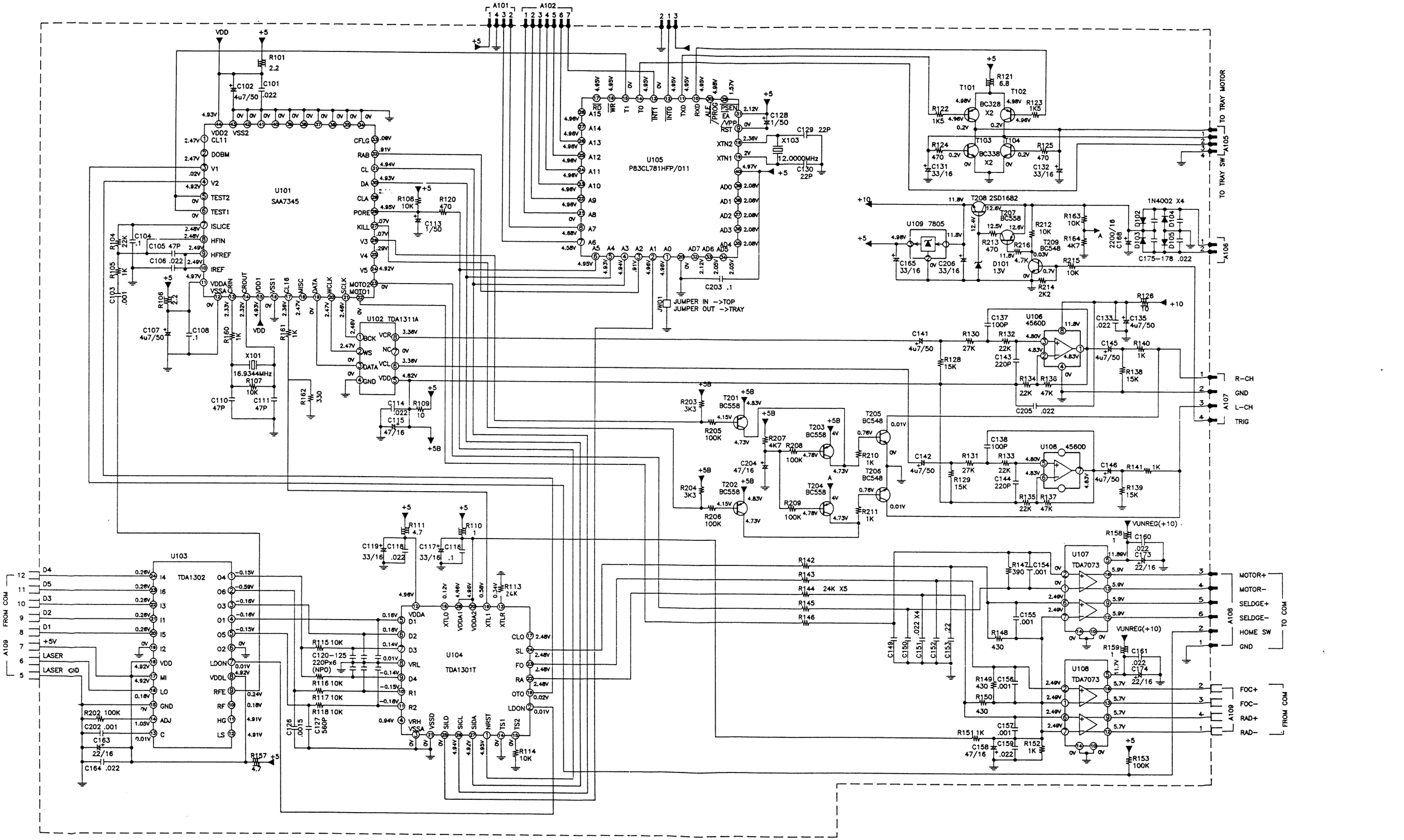
POWER & AMP CIRCUIT DIAGRAM



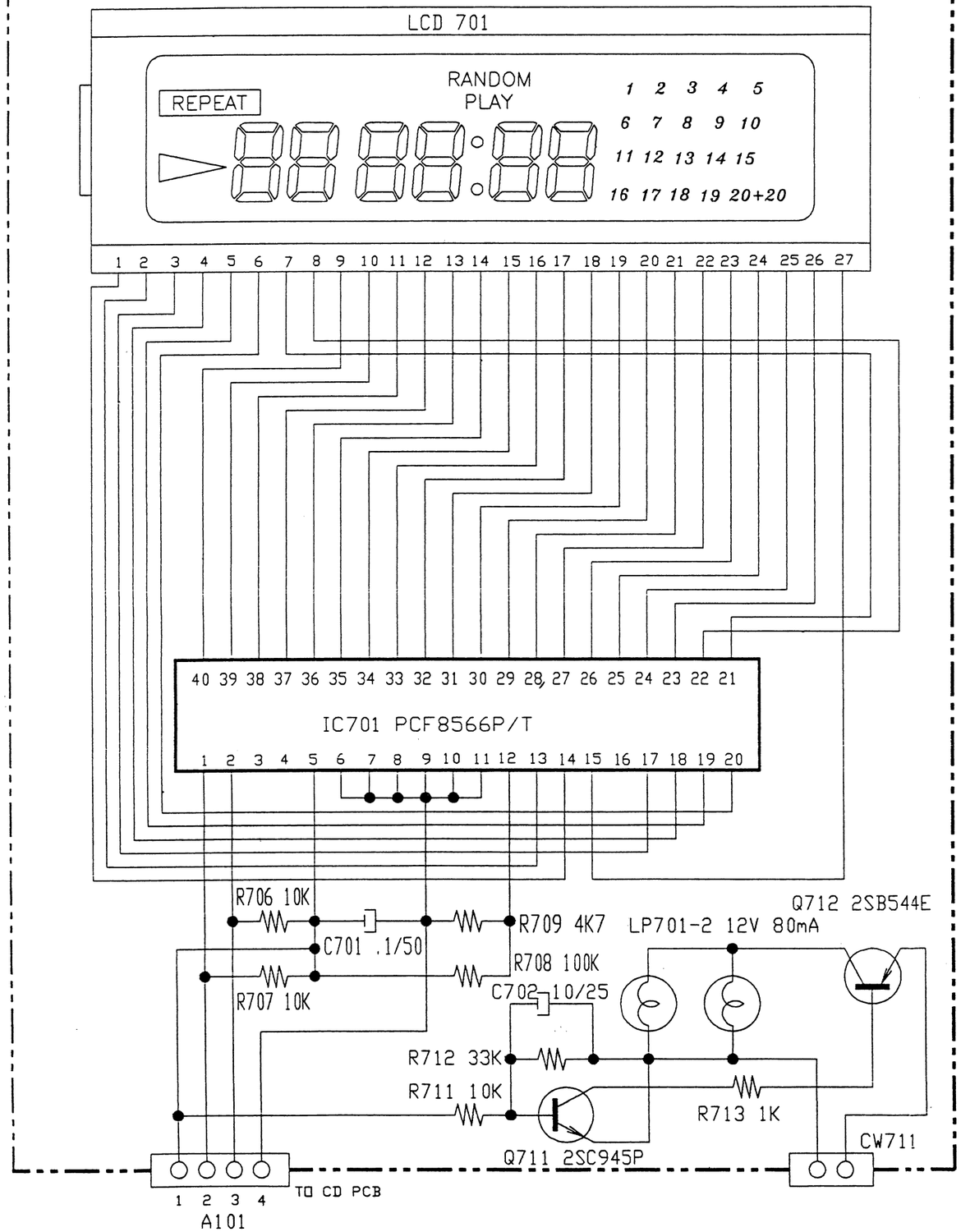
TUNER & DECK CIRCUIT DIAGRAM

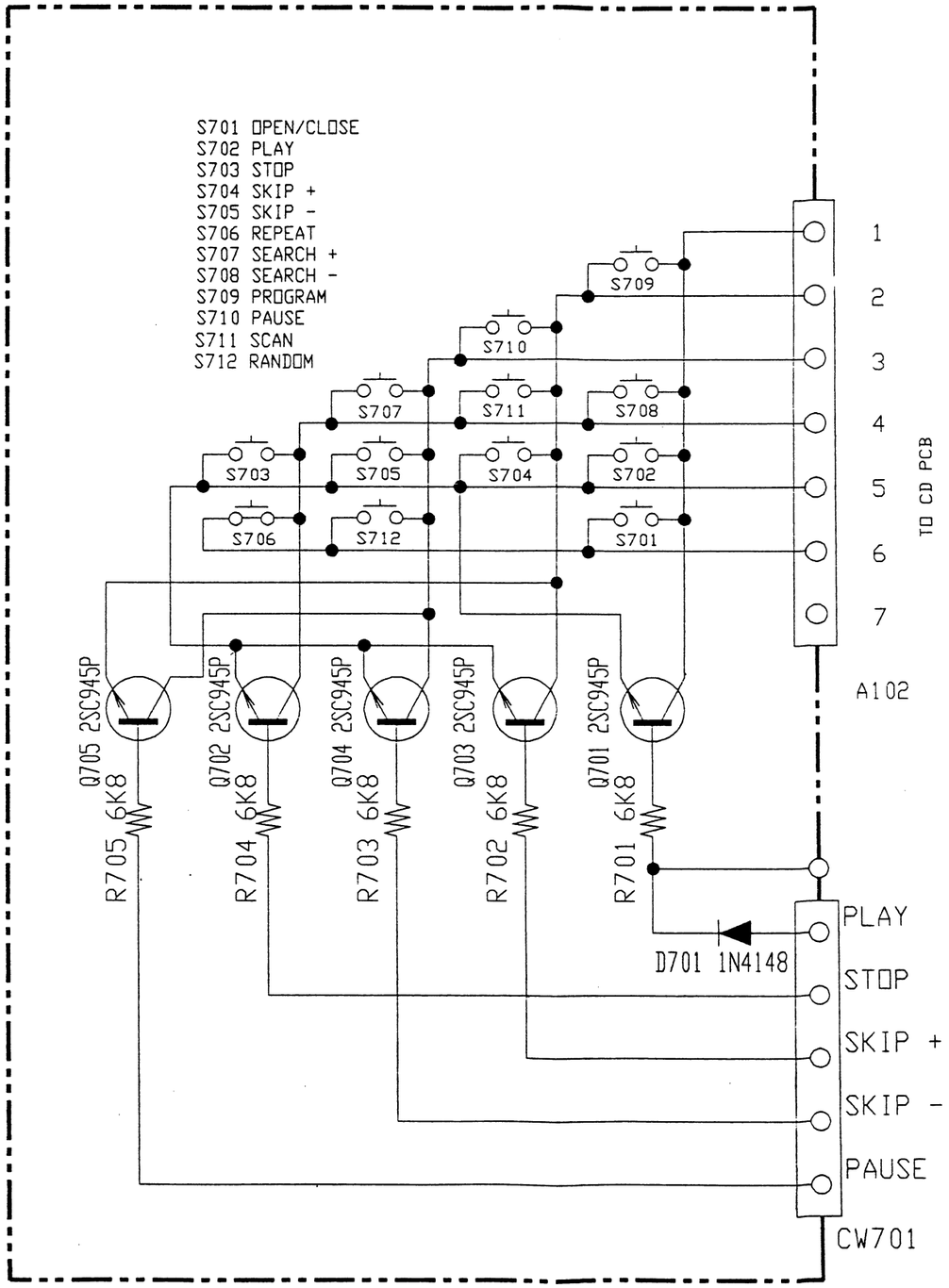


CD MAIN CIRCUIT DIAGRAM

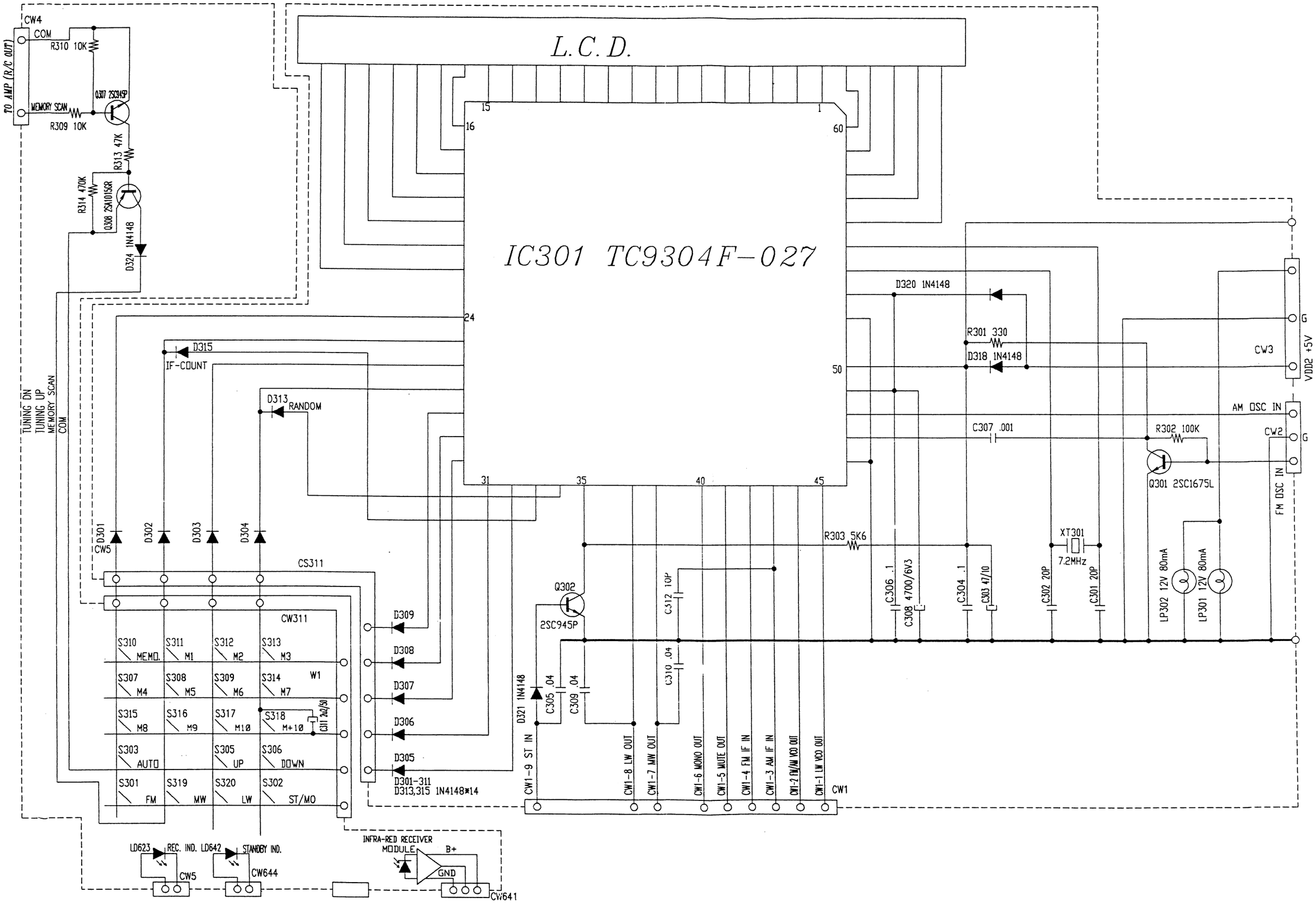


CD CONTROL CIRCUIT DIAGRAM



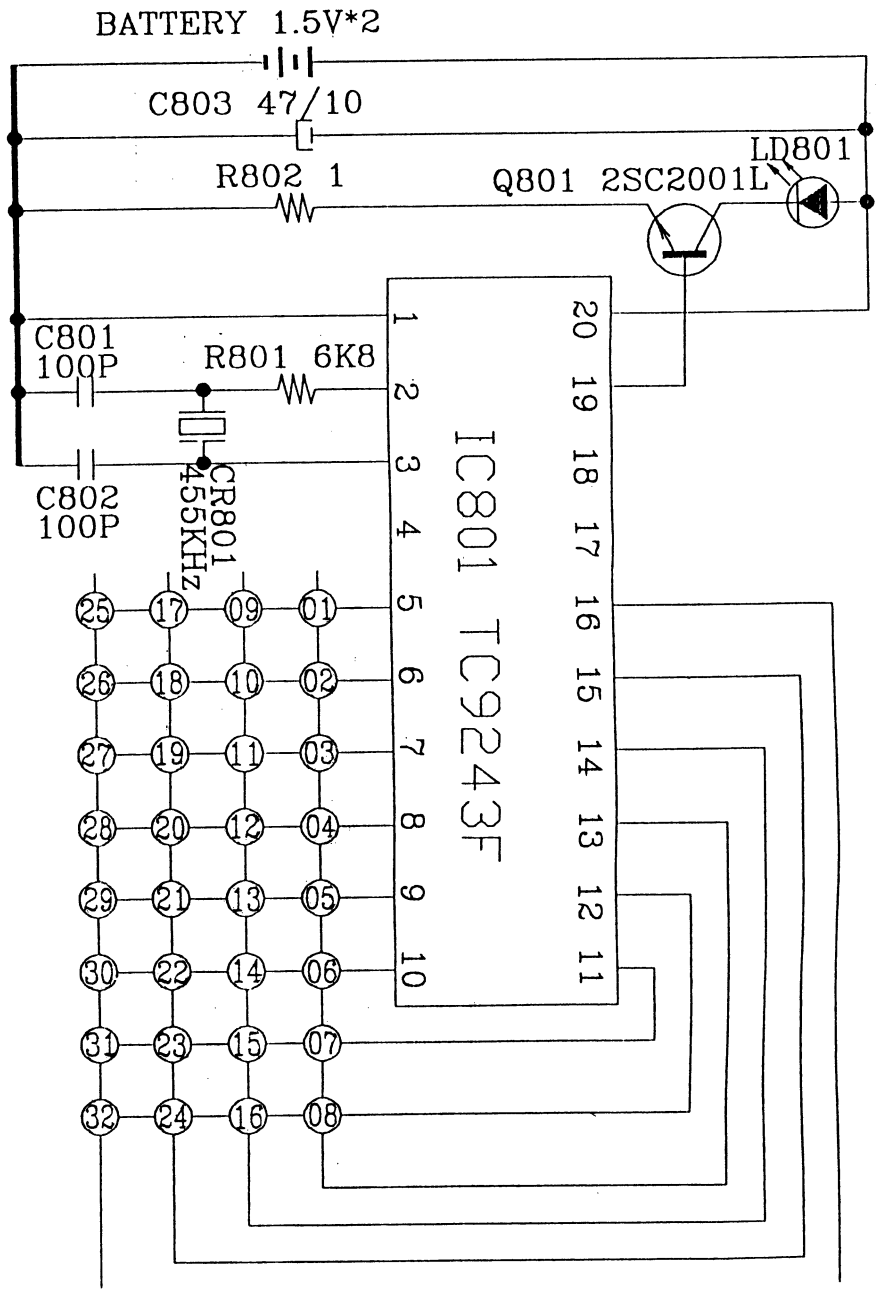


TUNER CONTROL CIRCUIT DIAGRAM

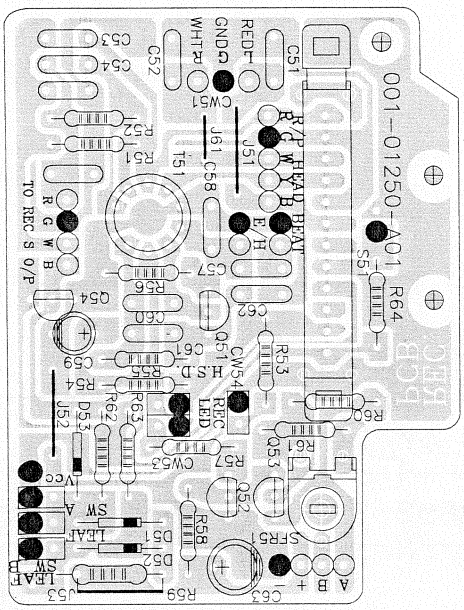


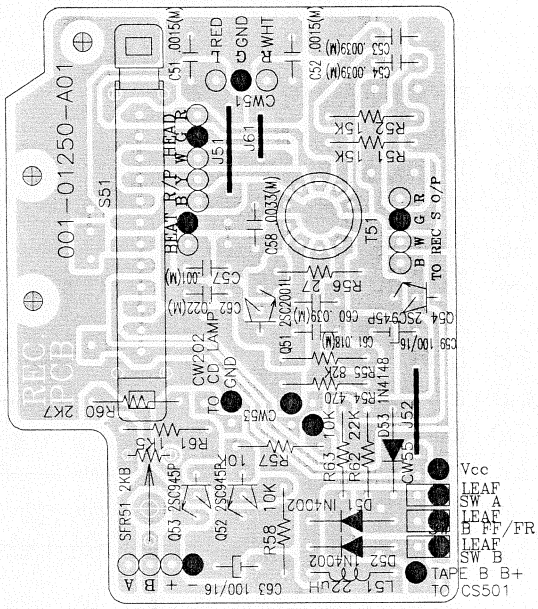
REMOTE CONTROL CIRCUIT DIAGRAM

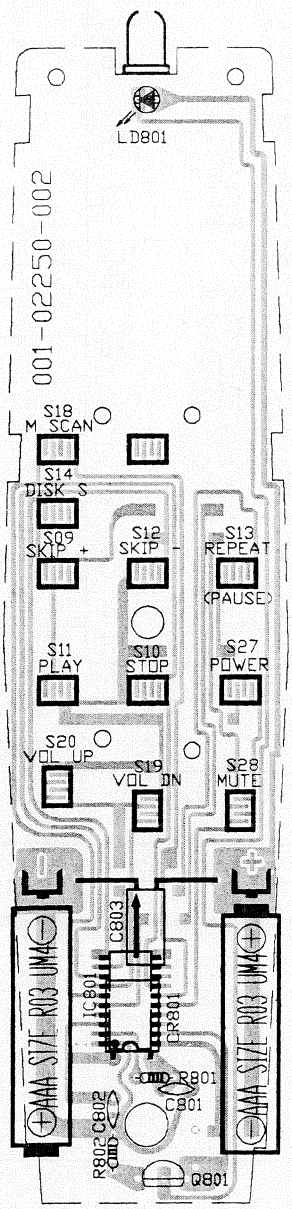
K27 POWER ON/OFF
K28 MUTE
K20 VOLUME UP
K19 VOLUME DOWN
K18 MEMORY SCAN
K14 DISK SELECTOR
K13 REPEAT
K12 SKIP −
K09 SKIP +
K10 STOP
K11 PLAY

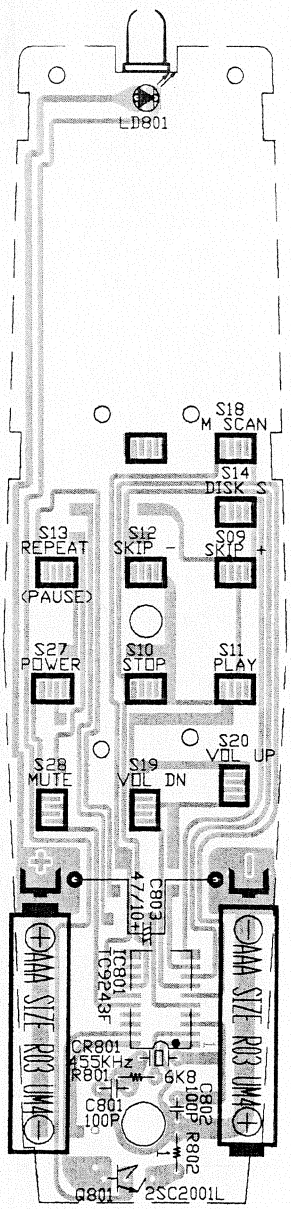


RECORD & REMOTE CONTROL P.C.B. LAYOUT

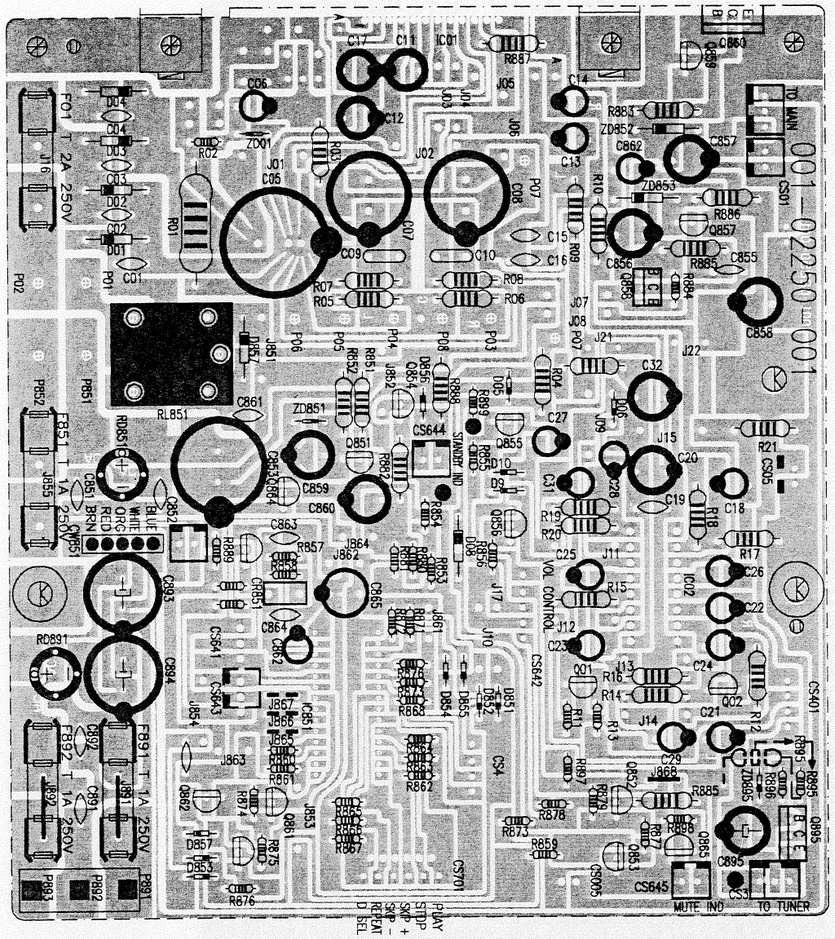


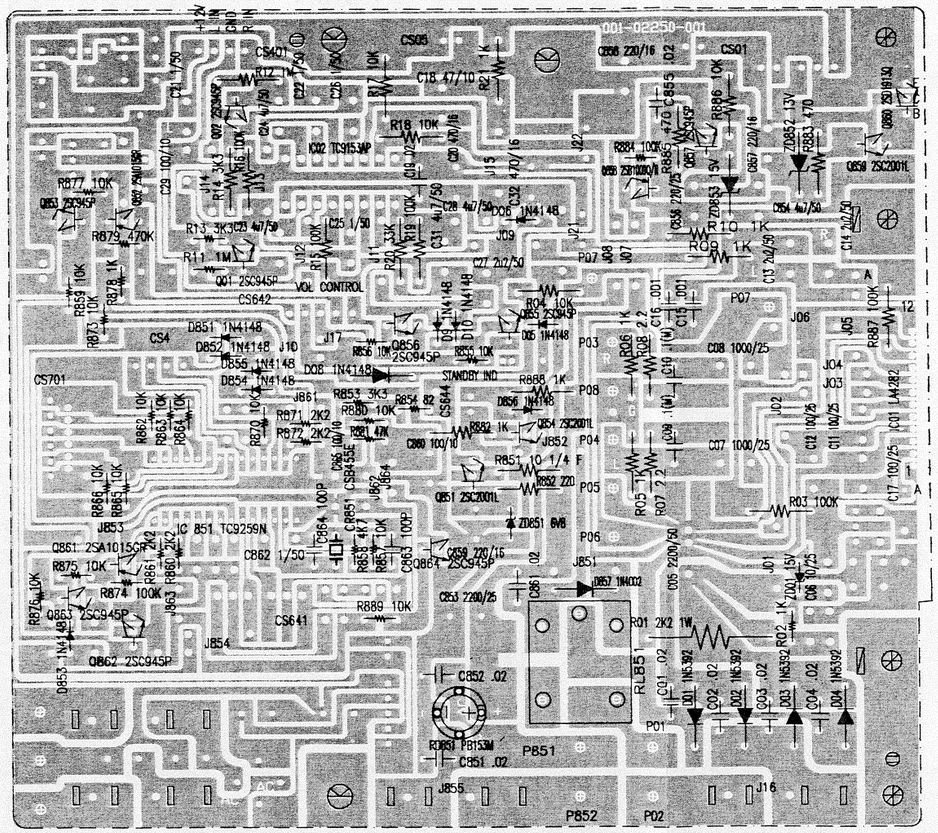




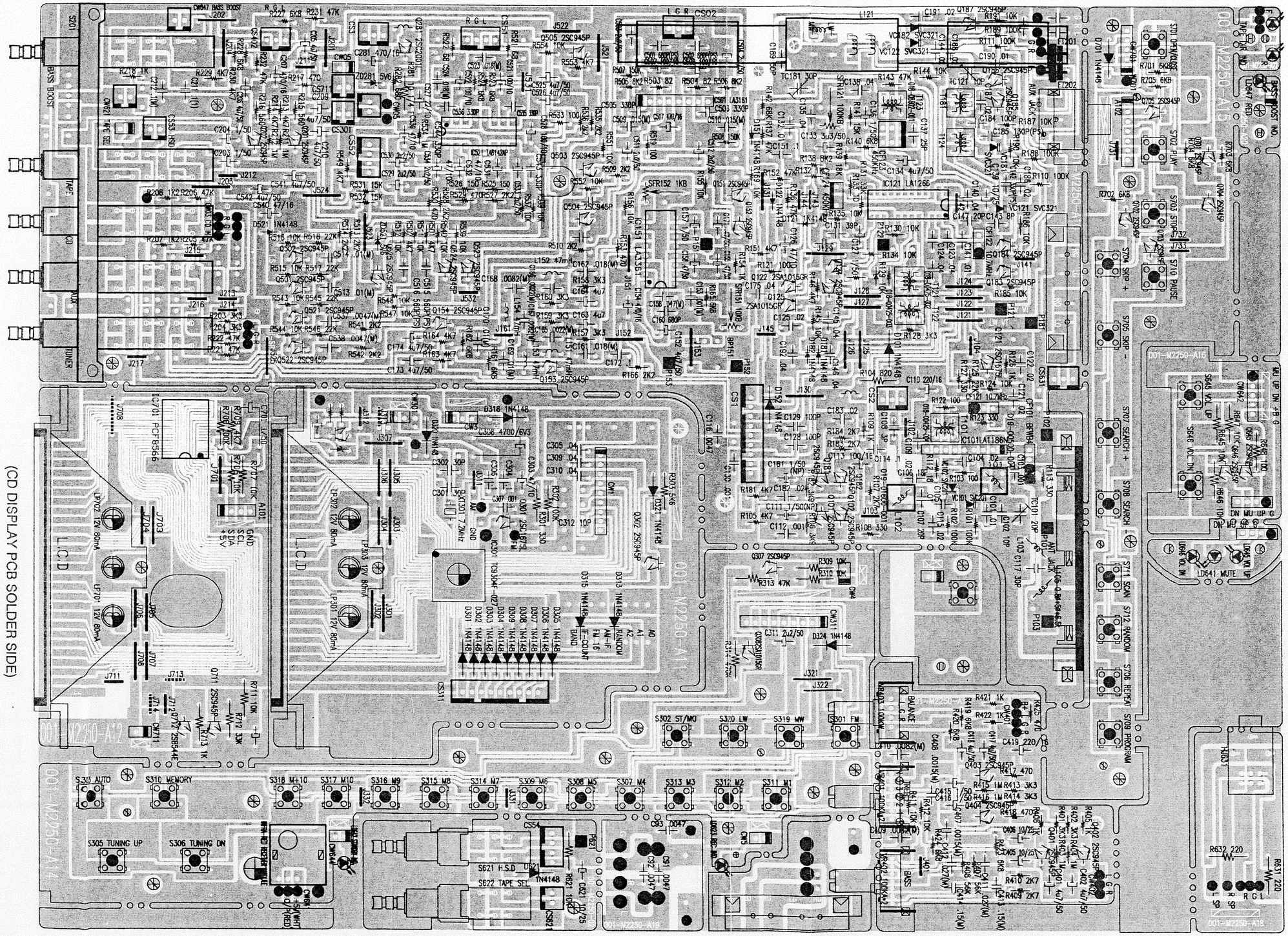


POWER & AMP P.C.B. LAYOUT

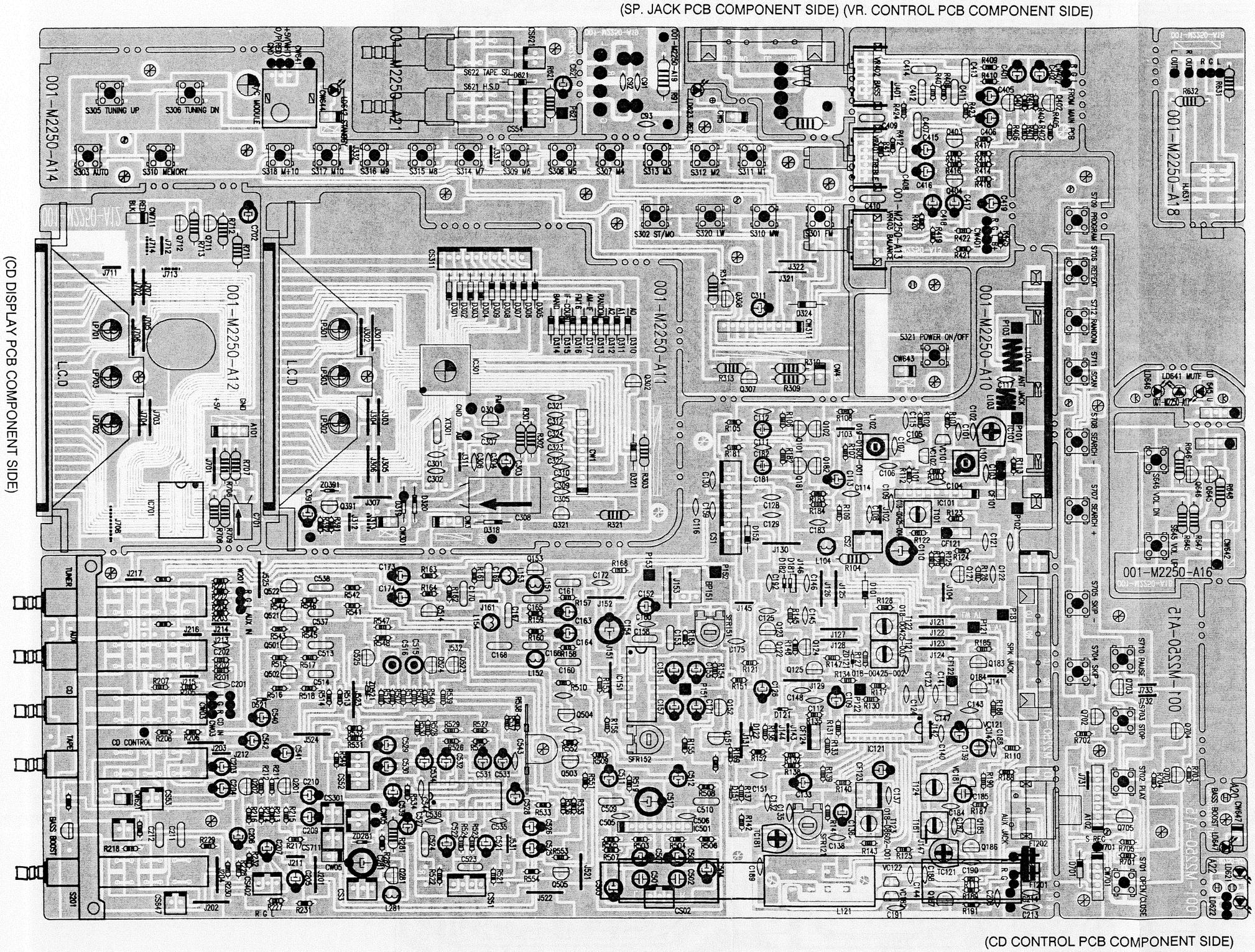




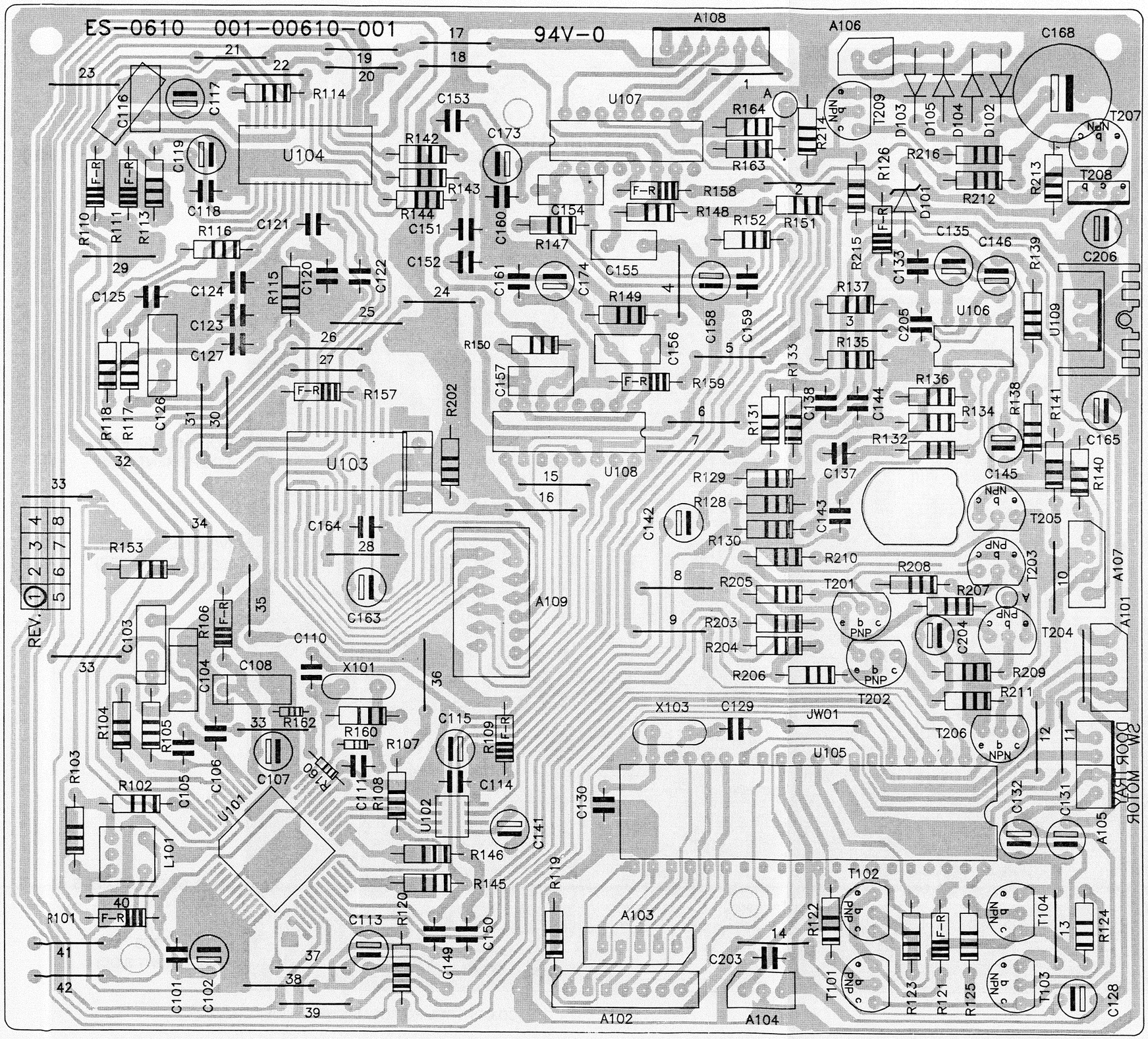
TUNER & DECK P.C.B. LAYOUT (BOTTOM VIEW)



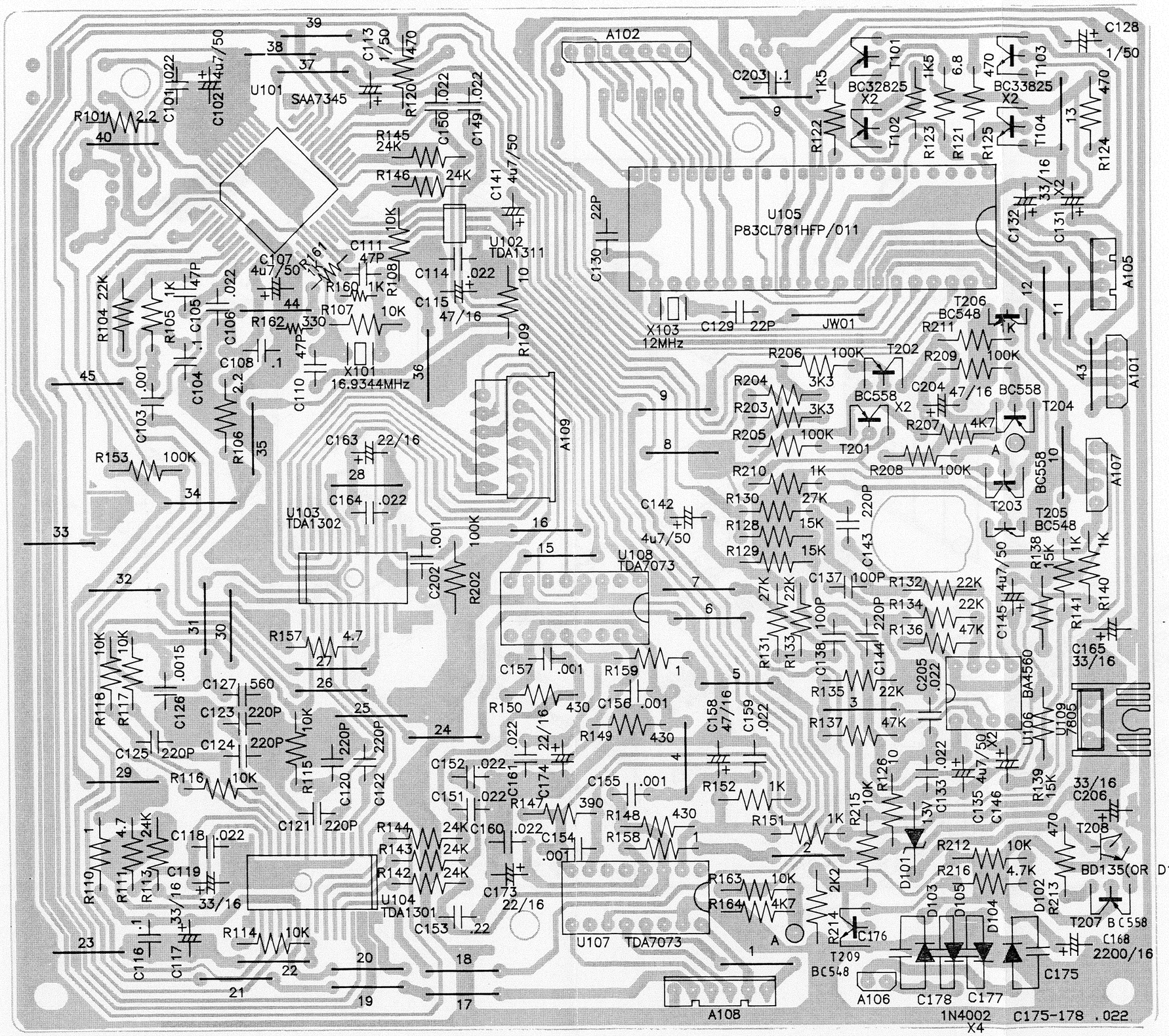
TUNER & DECK P.C.B. LAYOUT (TOP VIEW)



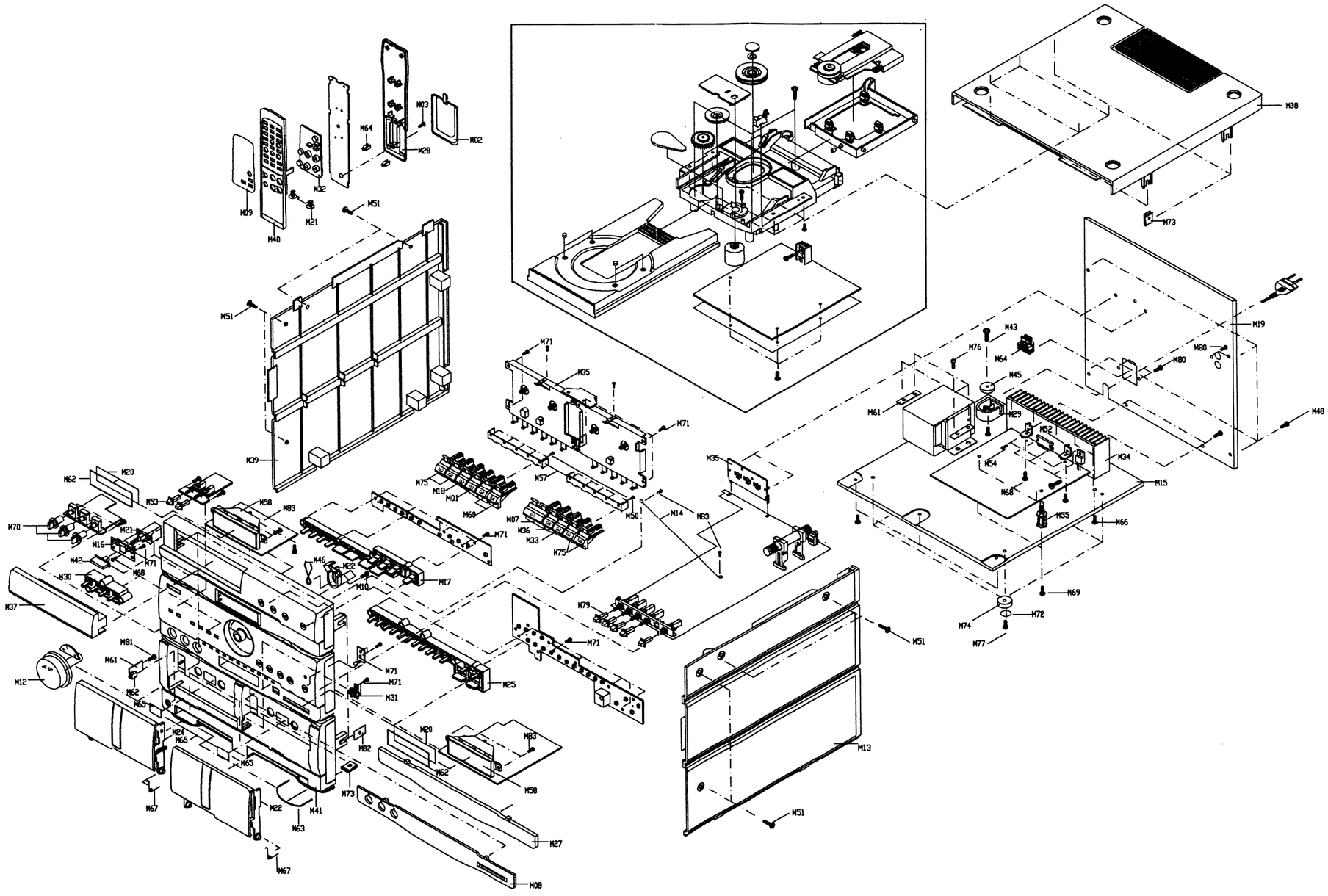
CD MAIN P.C.B. LAYOUT (TOP VIEW)



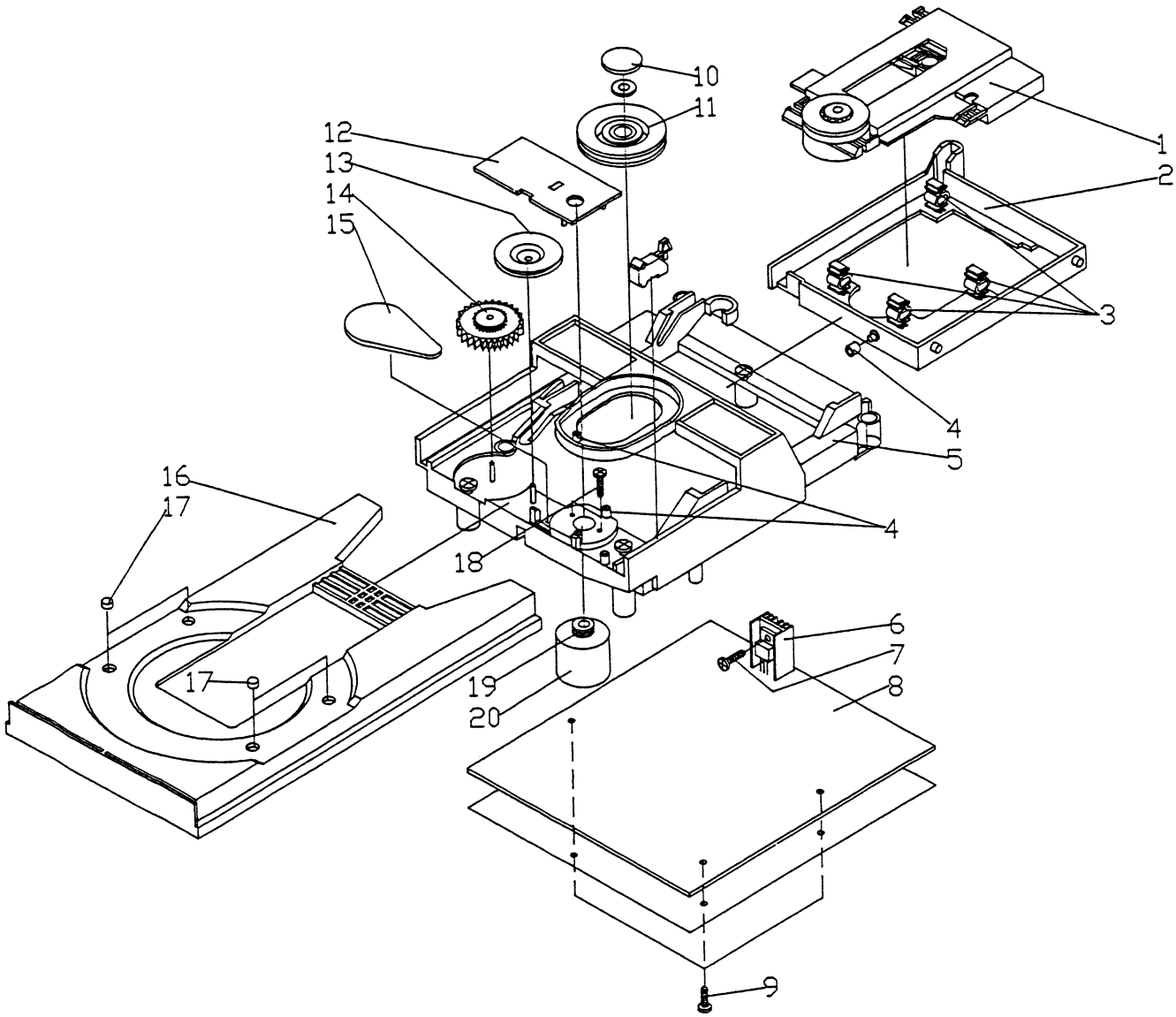
CD MAIN P.C.B. LAYOUT (BOTTOM VIEW)



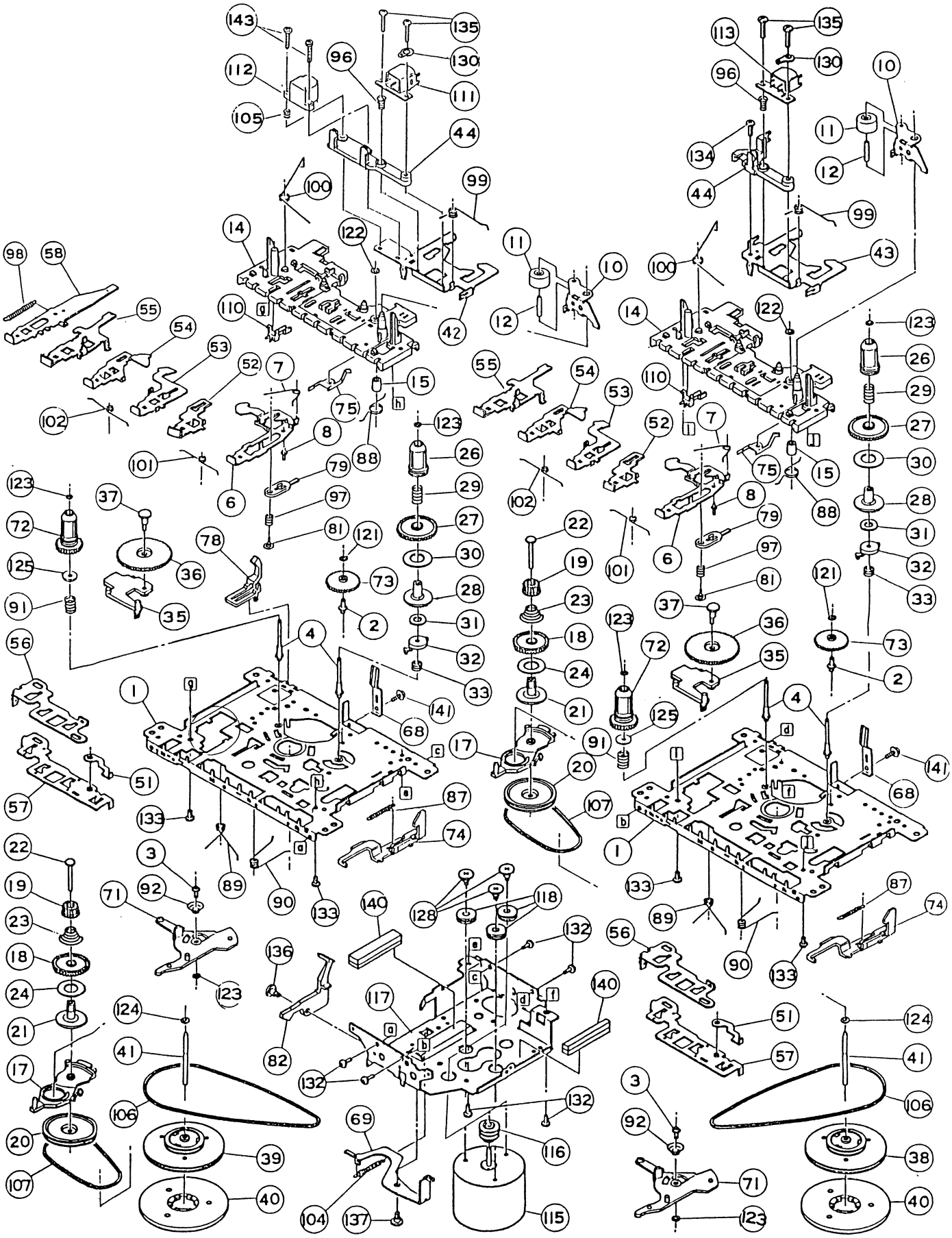
CABINET EXPLODED VIEWS



CD MECHANICAL EXPLODED VIEW



CASSETTE DECK EXPLODED VIEW



TUNER ALIGNMENT

INSTRUMENTS USED:
1. VTVM.
2. IF Sweep Generator(AM/FM).
3. Standard Signal Generator(AM/FM) and loop Antenna.
4. Oscilloscope.
5. Frequency Counter.
6. Voltmeter.

NOTE:
1. Signal input must be as low as possible to avoid overloading and clipping (Use highest sensitivity of output indicator)
2. Balance control and Tone control to mechanical center and Volume control to maximum.
3. Contact an 8 ohms load across the speaker terminals.

LW SECTION(Set function switch to LW position)

MODEL NO:252

Circuit Alignment	nstrument Connection	Step	Gen. freq	Dial Setting	Adjustment
IF	Connect the AM IF sweep gen. across TP121 and ground. Connect oscilloscope across TP122 and ground.	1	450KHz	Tune to 522KHz	Adjust T123 for maximum output.
		2	Repeat step 1 for optimal improvement.		
OSC	Connect voltmeter across TP181 and ground.	3	153KHz	tune to 153KHz	Adjust T181 (LW OSC Coil) 1.5V
		4	281KHz	Tune to 281KHz	Check for 8V +/- 0.5V
		5	Repeat step 3 and 4.		
RF tracking	Connect AM signal gen. for a radiated signal. Connect VTVM across speaker voice coil.	6	164KHz (Mod.30%)	Tune to 164KHz	Adjust L101(LW ant. coil) on forther core for Max. output
		7	272KHz (Mod. 30%)	Tune to 272KHz	Adjust TC181(LW ant. trimmer for maximunm output.
		8	Repeat step 6 and 7.		

MW SECTION(Set function switch to MW position)

Circuit Alignment	Instrument Connection	Step	Gen. freq.	Dial Setting	Adjustment
IF	Connect the AM IF sweep gen. across TP121 and ground. Connect oscilloscope across TP122 and ground.	1	450KHz	Tune to 522KHz	Adjust T123 for maximum output.
		2	repeat step 1 for optimal improvement.		
OSC	Connect Vlotmeter across TP101 and ground.	3	522KHz	tune to 522KHz	Adjust T124(AM OSC COIL).
		4	1620KHz	Tune to 1620KHz	Check for 8V +/- 0.5V
		5	Repeat step 3 and 4.		
RF tracking	Connect AM signal gen. for a radiated signal. Connect VTVM across speaker voice coil.	6	603KHz (Mod.30%)	Tune to 603KHz	Adjust L101(AW ant. coil) on forther core for Max. output
		7	1404KHz (Mod. 30%)	Tune to 1404KHz	Adjust TC121(MW ant. trimmer for maximunm output.
		8	Repeat step 6 and 7.		

FM SECTION(Set function switch to FM position)

Circuit Alignment	Instrument Connection	Step	Gen. freq.	Dial Setting	Adjustment
IF	Connect the FM IF sweep gen. across TP102 and ground. Connect oscilloscope across TP123 and ground.	1	10.7MHz	Tune to 87.5MHz	Adjust T121 and T122 for maximum symmetrical "S" curve.
		2	repeat step 1 for optimal improvement.		
OSC	Connect voltmeter across TP101 and ground.	3	87.5MHz	tune to 87.5MHz	Check for 2V
		4	108MHz	Tune to 108MHz	Adjust TC102 (osc coil) for 8V
		5	Repeat step 3 and 4.		
RF tracking	Connect FM signal gen. for a radiated signal. Connect VTVM across speaker voice coil.	6	90MHz (Mod.30%)	Tune to 90MHz	Adjust L101(RF COIL) for maximum output.
		7	106MHz (Mod. 30%)	Tune to 106MHz	Adjust TC101(RF trimmer) for maximunm output.
		8	Repeat step 6 and 7.		
Lock Sen's	Connect FM signal gen. to FM antenna terminals. Connect voltmeter across TP124 and 125	9	98MHz (Mod. 30%) 31dB output	Tune to 98MHz	Adjust T121 and T122 for 0V +/- 50mV
	Connect FM signal gen. to FM antenna terminals. Connect voltmeter across Pin 8 of IC and ground.	10	98MHz (Mod. 30%) 31dB output	Tune to 98MHz	Adjust SFR121 for 0V +/- 50mV

MPX SECTION(Set function switch to FM position)

Circuit Alignment	Instrument Connection	Step	Adjustment
19KHz stereo MPX	Connect frequency counter across TP151 and ground	1	Adjust SFR151 for 19KHz+/-50Hz
Separation	FM stereo Gen. freq. 98MHz ant. I/P 61dB. VTVM connect to speaker output.	2	Adjust SFR152 for maximum separation(both L/CH or R/CH)

DECK ALIGNMENT

CASSETTE ELECTRICAL ADJUSTMENTS
INSTRUMENTS USED:
1. VTVM.
2. Test tape MTT-114, MTT-111 or equivalent.

Item	ignal source	Output indicator	Mode	Adjustment	Specification
Head Azimuth adjustment	Insert a 10KHz test tape (MTT-114)	Connect VTVM to output terminal.	Playback	Head azimuth adjustment screw (see figure 1)	Maximum (L/R Channel)

CASSETTE MECHANICAL ADJUSTMENTS

INSTRUMENT USED:
1. Cassette troque test tape (HARTAK X-87 or equivalent)

Item	Signal source	Mode	Specification	Adjustment method	Remark
Take-up direction adjustment adjustment	Cassette troque test tape as shown in figure 2 shown in figure 2	Playback	40 -70 gr-cm	Carefully bend the spring in either direction to achieve between 40-70 gr-cm take-up torque as shown in figure 3.	Clean the oil and dust adhering to flybelt and rubber ring of the take-up reel table.

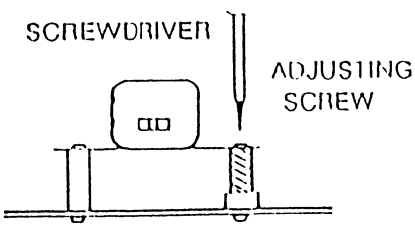


Fig. 1

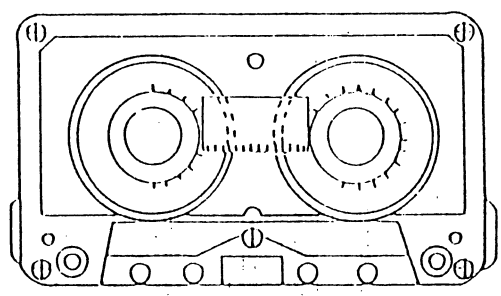


Fig. 2

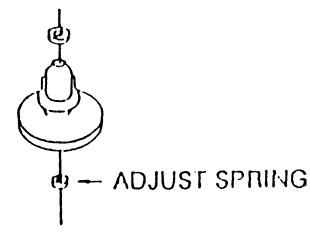
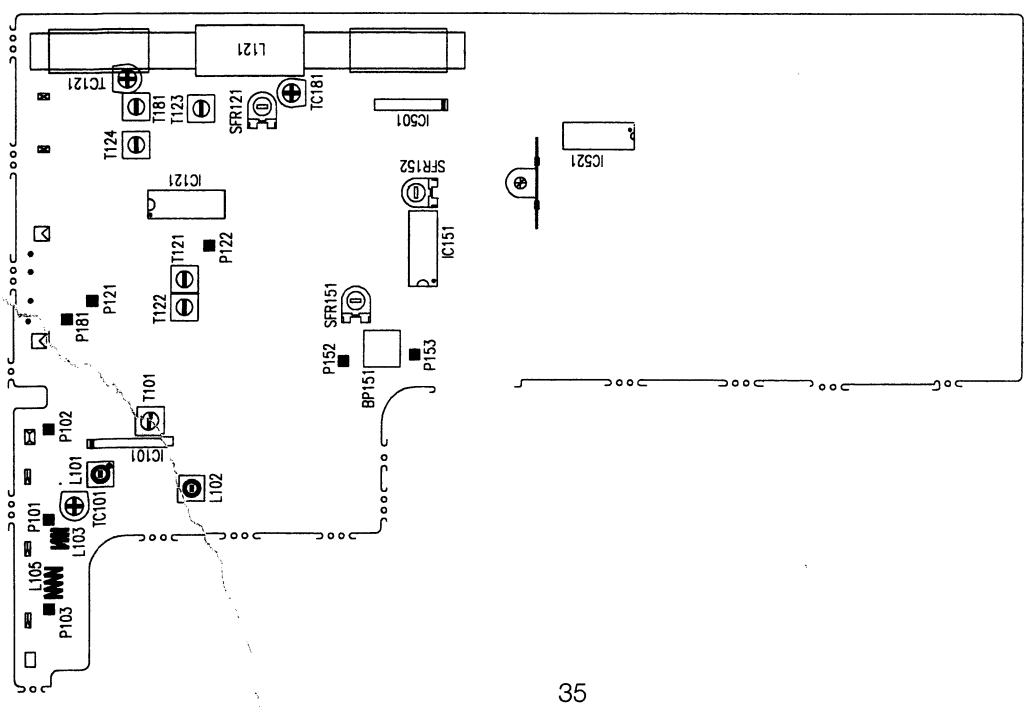
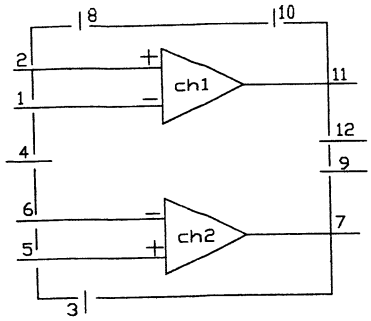


Fig. 3

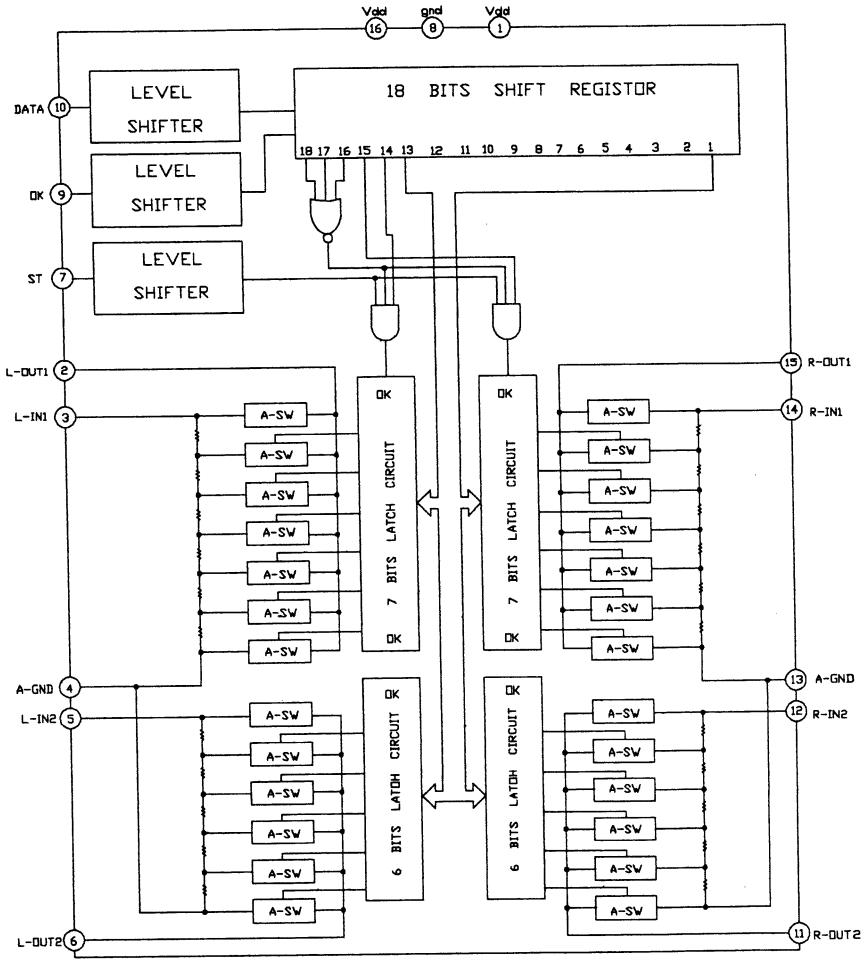


IC BLOCK DIAGRAM

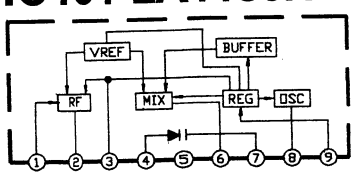
IC1 LA4282



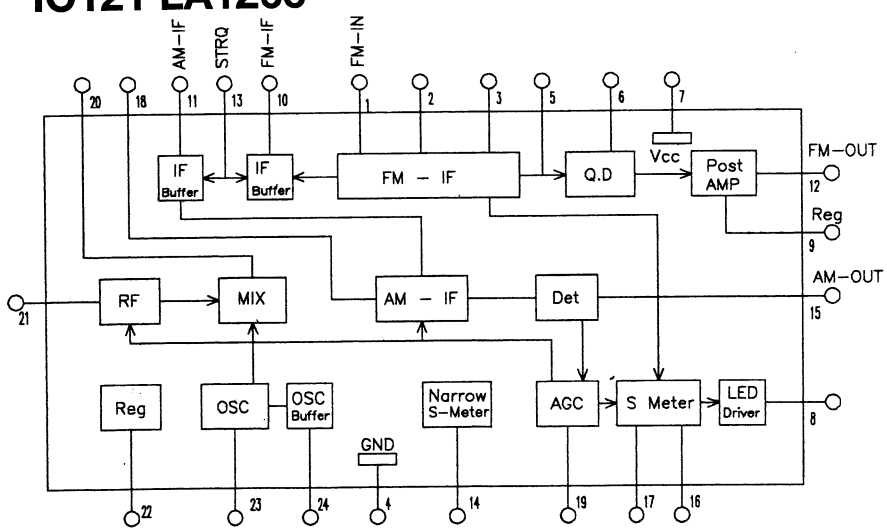
IC2 TC9153AP



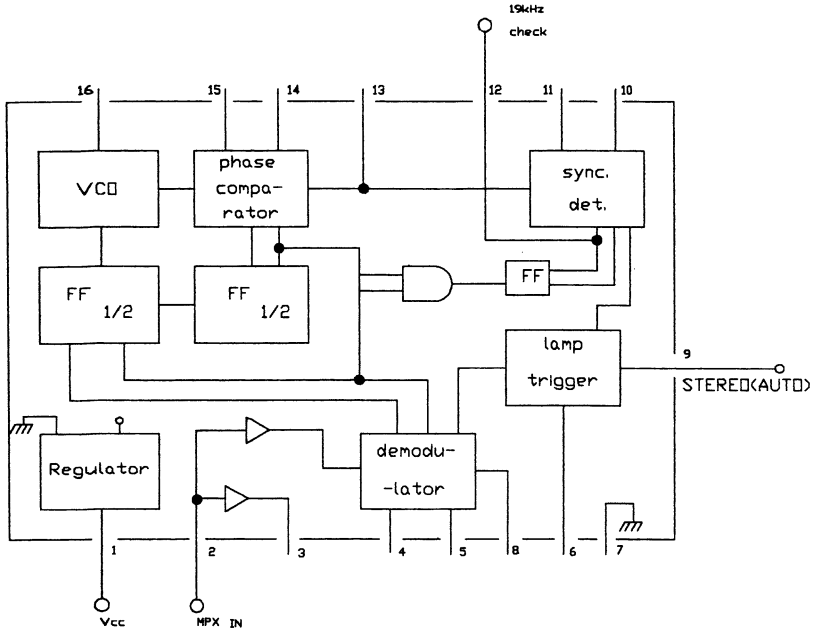
IC101 LA1186N



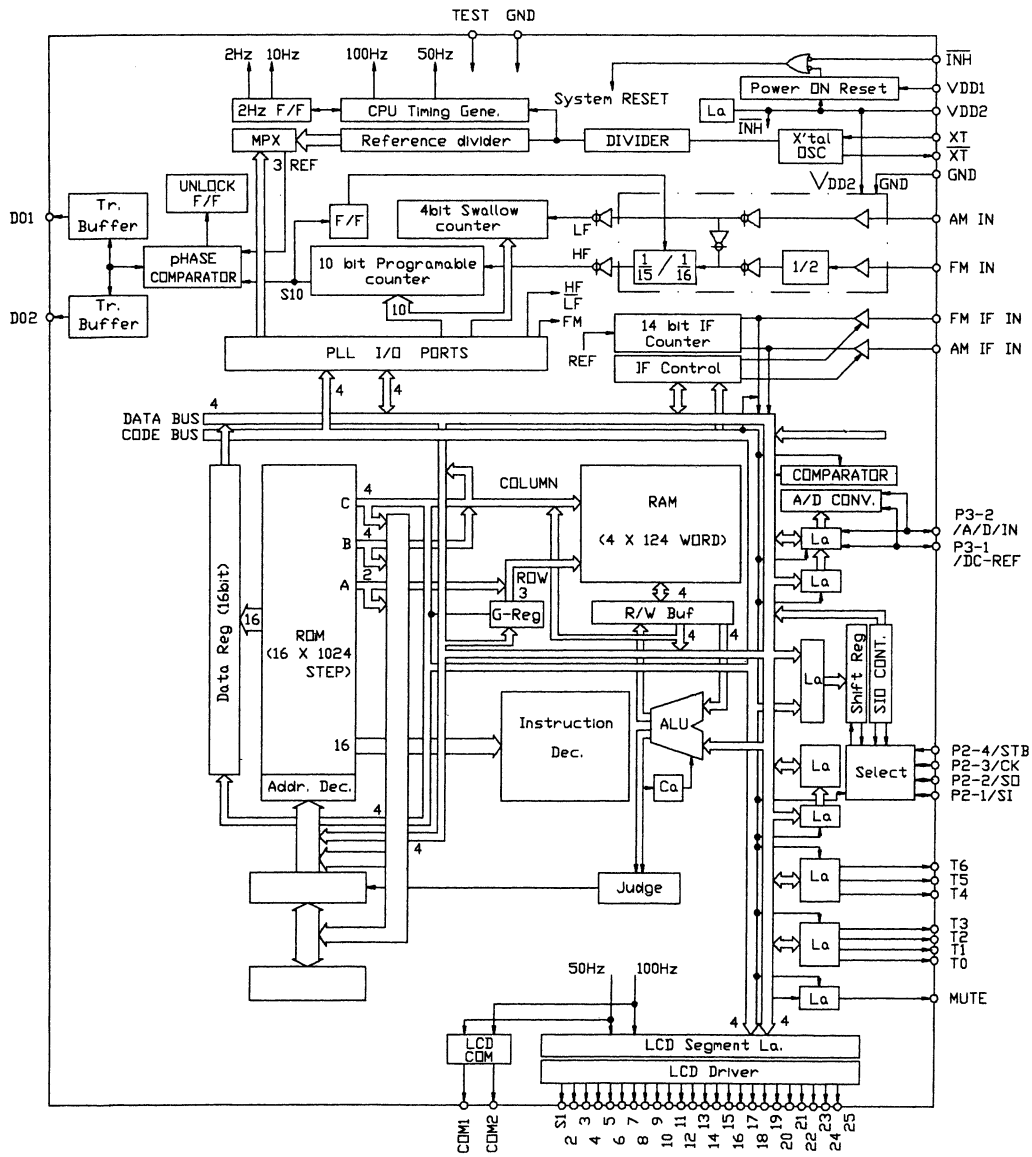
IC121 LA1266



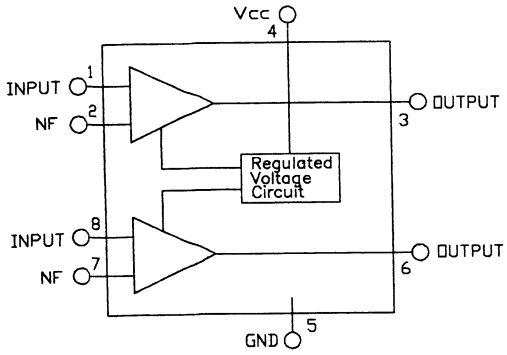
IC151 LA3361



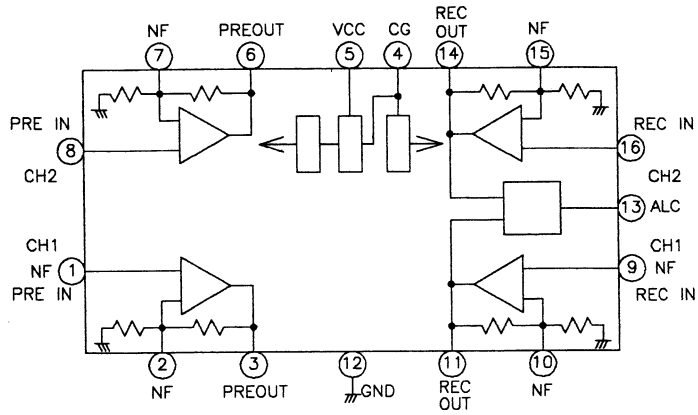
IC301 TC9304F-027



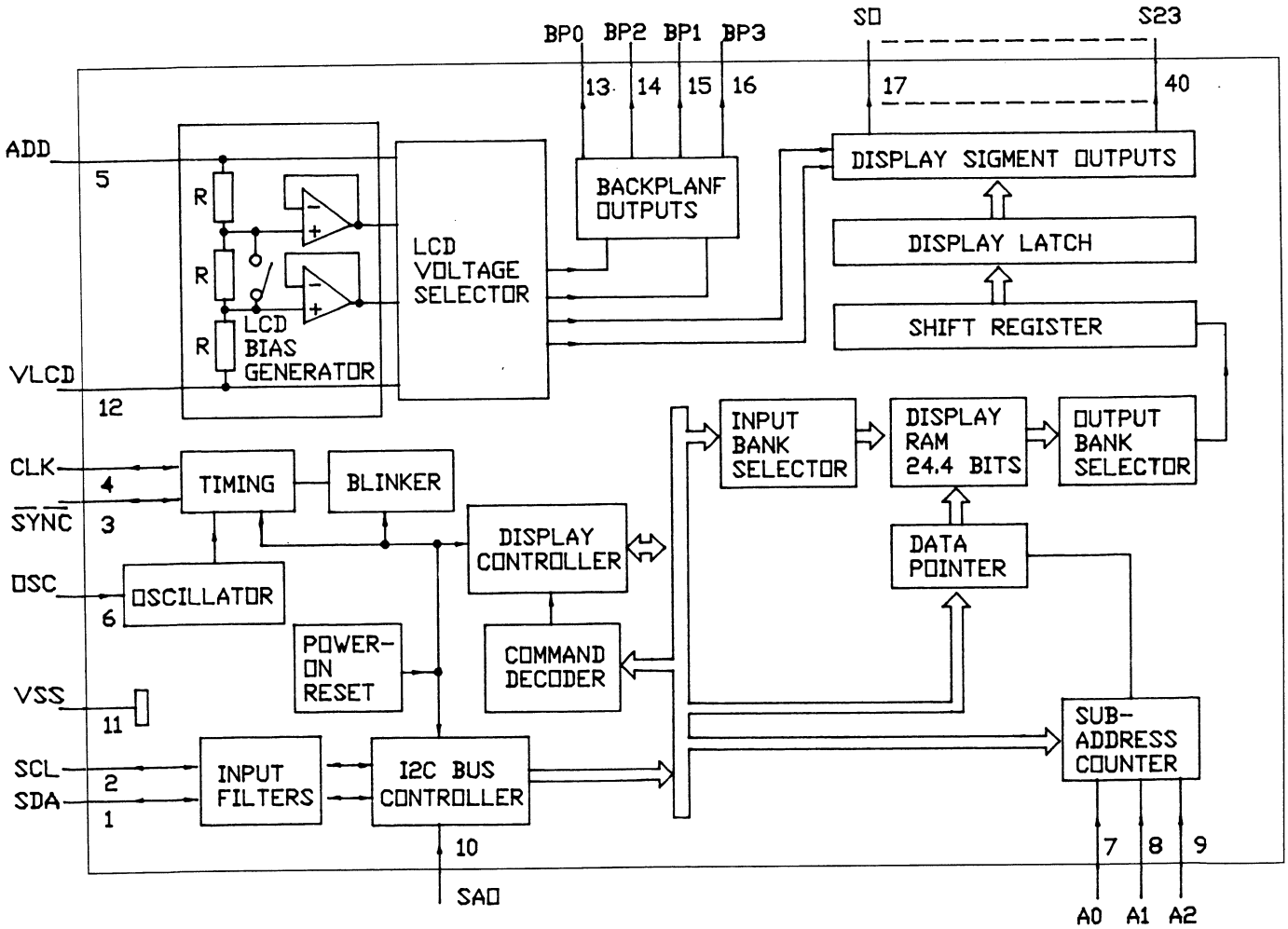
IC501 LA3161



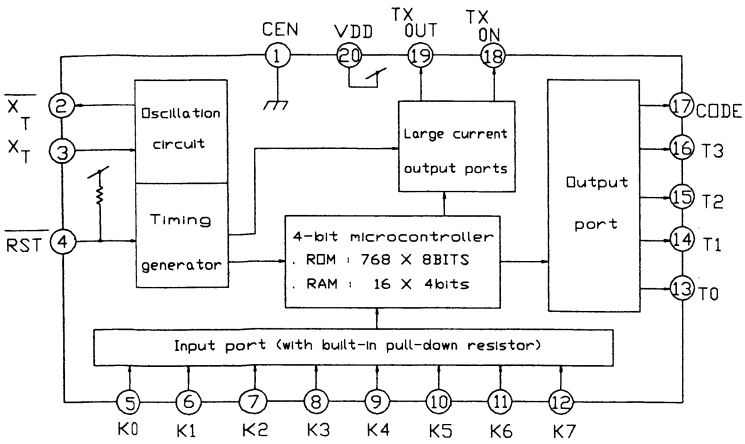
IC521 TA8142AP



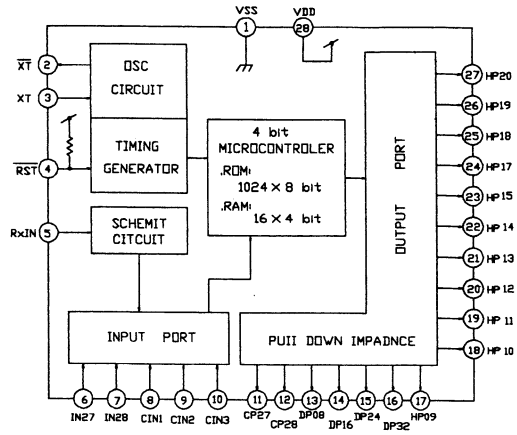
IC701 PCF8566T



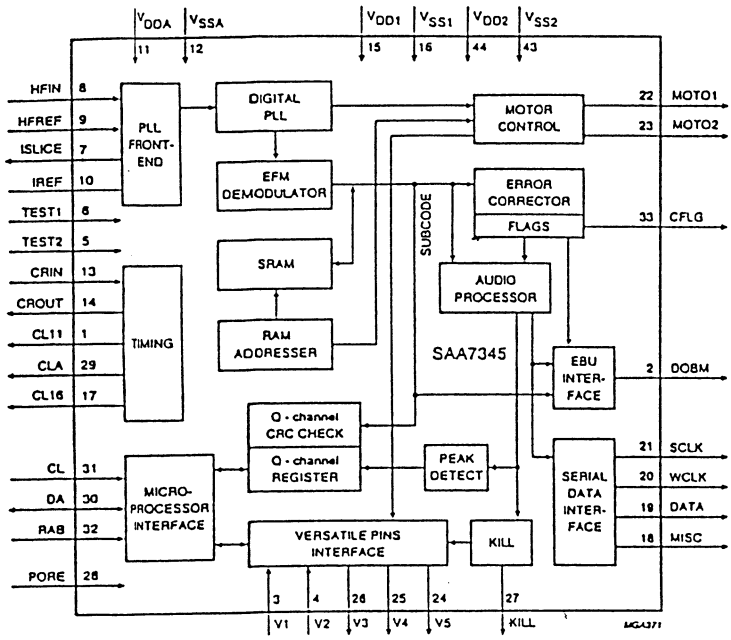
IC801 TC9243F



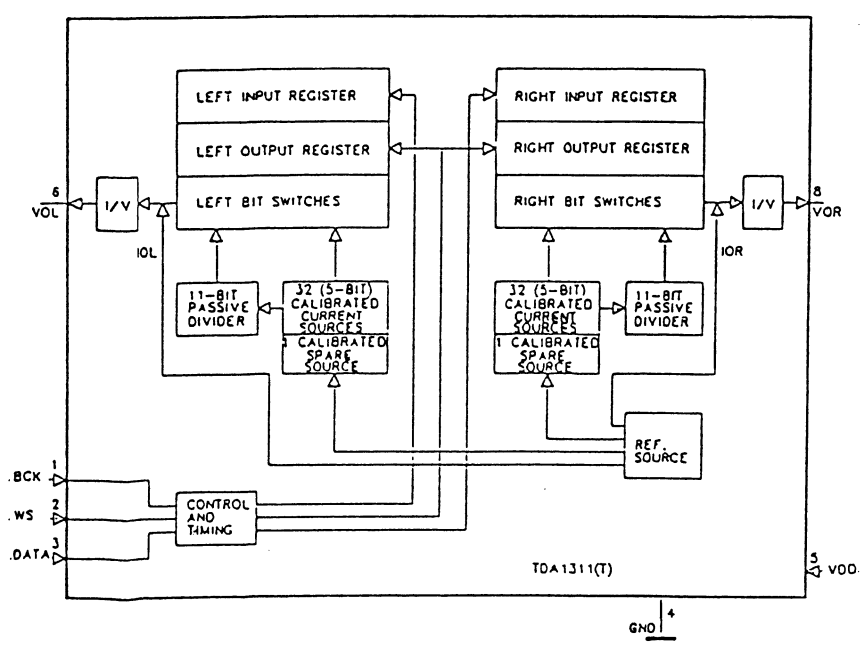
IC851 TC9259N



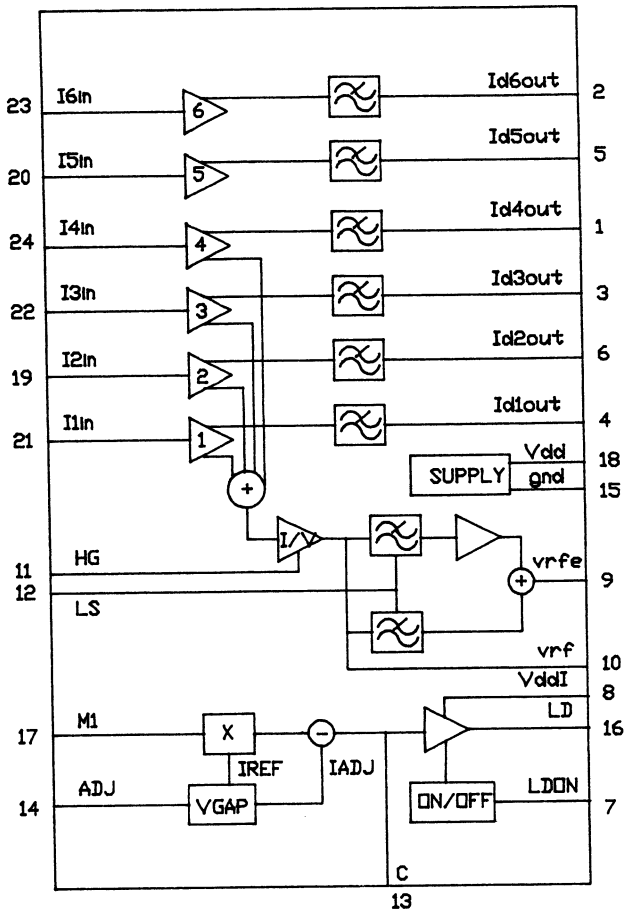
U101 SAA7345



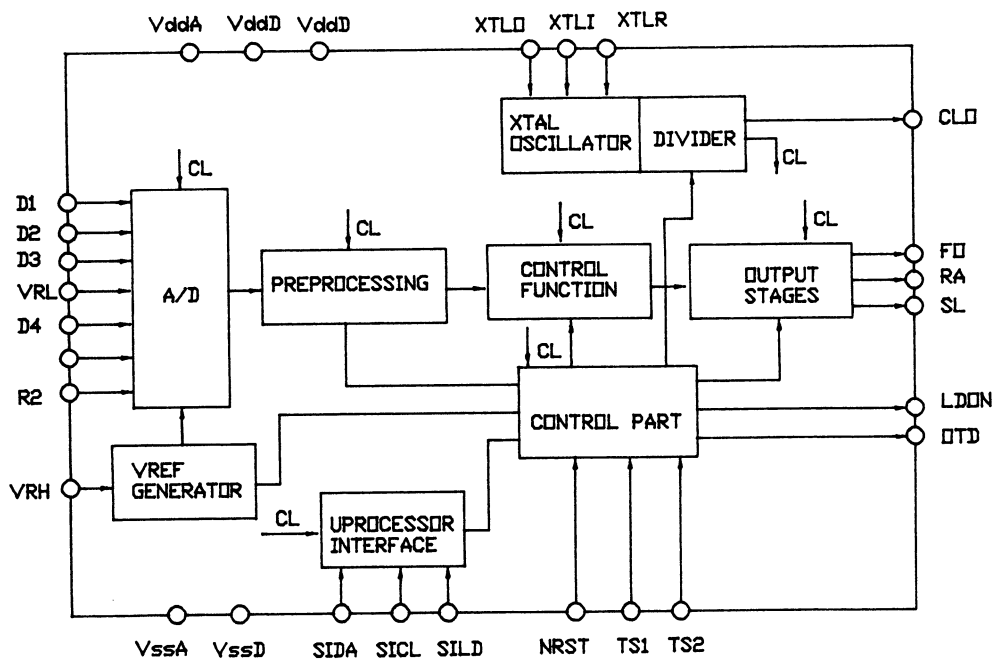
U102 TDA1311T



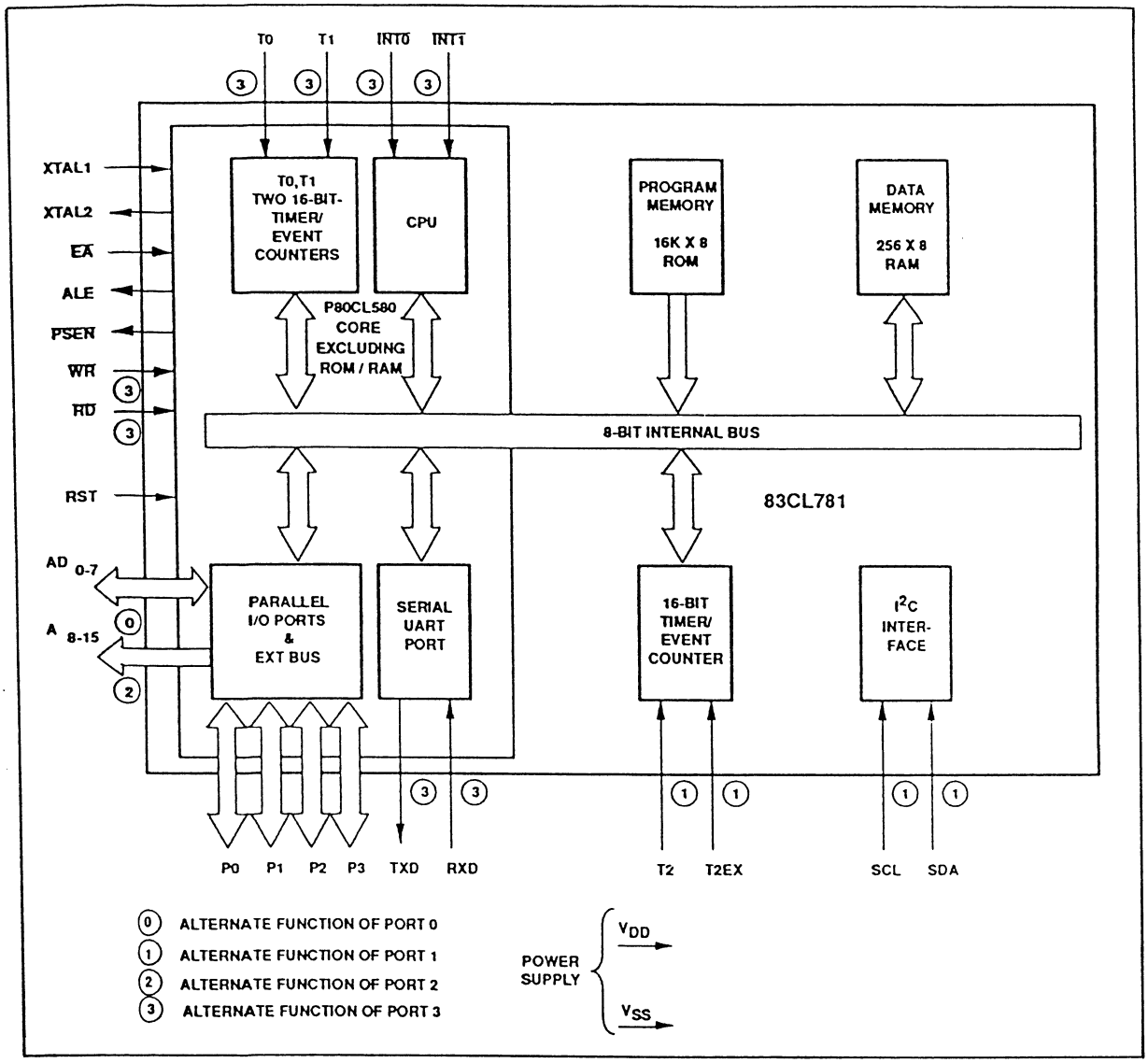
U103 TDA1302T



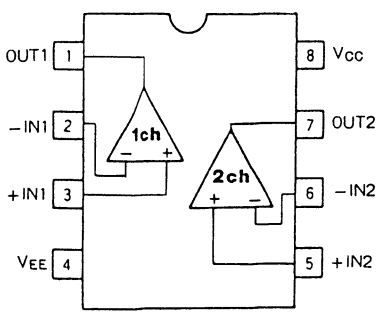
U104 TDA1301T



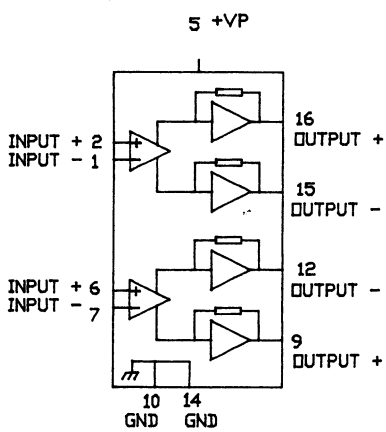
U105 P83CL781HFP/011



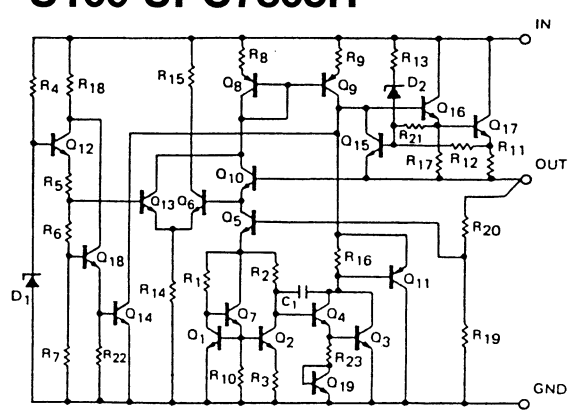
U106 BA4560D



U107,108 TDA7073



U109 UPC7805H



IC VOLTAGE LIST

IC01 LA4282

PIN	1	2	3	4	5	6	7	8	9	10
VOLTAGE	1.12	0.71	13.12	0	0.70	1.12	13.26	0	26.5	13.33

IC02 TC9153 16PIN

PIN	1	2	3	4	5	6	7	8
FM	1.55	1.55	1.55	0	6.97	6.97	0.95	1.66
MW/LW	1.09	1.09	1.09	0	7.31	7.31	0.95	1.68
PIN	9	10	11	12	13	14	15	16
FM	1.46	1.55	0.75	5.87	0.08	0.08	2.43	2.43
MW/LW	1.45	1.09	0.75	6.82	1.34	1.34	2.37	2.37

IC101 LA1186

PIN	1	2	3	4	5	6	7	8	9
VOLTAGE	1.0	1.71	4.69	0	0	4.77	1.63	4.1	4.77

IC121 LA1266

PIN	1	2	3	4	5	6	7	8	9	10	11	12
FM	2.49	2.51	2.51	0	9.42	9.43	9.12	9.12	4.36	2.45	2.86	2.96
MW/LW	1.12	1.12	1.12	0	9.49	9.49	9.49	9.48	3.84	2.61	2.25	3.15
PIN	13	14	15	16	17	18	19	20	21	22	23	24
FM	0.07	1.32	1.61	0.23	0.05	2.5	1.61	0.13	4.04	4.04	4.04	3.19
MW/LW	0.05	1.37	1.52	0.05	0.05	1.16	1.49	3.48	3.68	3.68	3.68	2.26

IC151 LA3361

PIN	1	2	3	4	5	6	7	8
MONO	5.06	2.35	1.69	1.49	1.48	9.45	0	0.47
ST	5.06	2.35	1.69	1.49	1.48	0.78	0	0.47
PIN	9	10	11	12	13	14	15	16
MONO	2.24	1.36	1.34	1.98	1.35	1.35	1.35	0.1
ST	0.34	1.36	1.34	1.01	1.35	1.35	1.35	0.81

IC301 TC9304F-027

PIN	1	2	3	4	5	6	7	8	9	10
VOLTAGE	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
PIN	11	12	13	14	15	16	17	18	19	20
VOLTAGE	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
PIN	21	22	23	24	25	26	27	28	29	30
VOLTAGE	2.25	2.25	4.45	0.06	0.25	0.06	0.25	0.25	0.02	0.28
PIN	31	32	33	34	35	36	37	38	39	40
VOLTAGE	0.25	0.25	0.27	0.27	0.08	0.84	0.06	0.06	4.45	0.06
PIN	41	42	43	44	45	46	47	48	49	50
VOLTAGE	0.06	2.21	0.07	1.15	1.16	0.06	2.15	1.33	4.45	4.35
PIN	51	52	53	54	55	56	57	58	59	60
VOLTAGE	0.06	0.06	4.45	2.0	1.99	2.25	2.25	2.25	2.25	2.25

IC501 LA3161

PIN	1	2	3	4	5	6	7	8
VOLTAGE	1.27	0.76	4.09	11.38	0	4.08	0.75	1.27

IC521 TA8142AP

PIN	1	2	3	4	5	6	7	8
VOLTAGE	0	1.24	2.05	1.43	11.2	2.05	1.24	0
PIN	9	10	11	12	13	14	15	16
VOLTAGE	0.03	1.26	2.25	0	0.78	2.26	1.26	0.03

IC701 PCF8566AP 40PIN

PIN	1	2	3	4	5	6	7	8	9	10
VOLTAGE	4.5	4.37	4.95	2.53	5	0	0	0	0	0
PIN	11	12	13	14	15	16	17	18	19	20
VOLTAGE	0	0.26	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63
PIN	21	22	23	24	25	26	27	28	29	30
VOLTAGE	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63
PIN	31	32	33	34	35	36	37	38	39	40
VOLTAGE	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63	2.63

IC851 TC9259N

PIN	1	2	3	4	5	6	7	8	9	10
VOLTAGE	0	2.6	1.99	4.97	4.9	0	0	0	0	0
PIN	11	12	13	14	15	16	17	18	19	20
VOLTAGE	0.27	0.28	0	0	0	0	0.1	0.1	0.1	0.1
PIN	21	22	23	24	25	26	27	28		
VOLTAGE	0.1	0	0	0	0.12	0.32	0.32	4.99		

U101 SAA7345

PIN	1	2	3	4	5	6	7	8	9	10	11	12
V	2.47	2.47	0.02	4.92	0	0	2.48	2.48	2.49	2.49	4.97	0
PIN	13	14	15	16	17	18	19	20	21	22	23	24
V	2.33	2.32	4.93	0	2.36	2.47	0	2.47	2.46	0	0	4.92
PIN	25	26	27	28	29	30	31	32	33	34	35	36
V	0.29	0.07	0.07	4.95	2.47	4.93	4.94	0.91	0.09	0	0	0
PIN	37	38	39	40	41	42	43	44	45	46	47	48
V	0	0	0	0	0	0	0	4.93				

U102 TDA1311T

PIN	1	2	3	4	5	6	7	8	9	10	11	12
V	2.46	2.47	0	0	4.82	3.36	0	3.36				

U103 TDA1302

PIN	1	2	3	4	5	6	7	8	9
V	-0.15	-0.15	-0.165	-0.16	-0.15	0	0.01	4.92	0.24
PIN	10	11	12	13	14	15	16	17	18
V	0.18	4.91	4.91	0.01	1.25	0	0.16	4.92	4.92
PIN	19	20	21	22	23	24	25	26	27
V	0	0.26	0.26	0.26	0.26	0.26			

U104 TDA1301T

PIN	1	2	3	4	5	6	7	8	9	
V	4.95	0.01	0	0.94	0.16	0.16	0.14	0.01	-0.14	
PIN	10	11	12	13	14	15	16	17	18	
V	-0.15	-0.16	4.96	0.34	0	0	0.02	2.48	0.12	
PIN	19	20	21	22	23	24	25	27	28	28
V	0.58	4.96	0	2.48	2.48	2.48	0	4.94	4.92	4.96

U105 P87C52

PIN	1	2	3	4	5	6	7	8	9	10	11	12
V	4.96	4.96	0.91	4.94	4.93	4.95	4.58	4.68	0	4.95	4.95	4.95
PIN	13	14	15	16	17	18	19	20	21	22	23	24
V	0	4.95	0	4.95	4.95	2.36	2	0	0	4.96	4.96	4.96
PIN	25	26	27	28	29	30	31	32	33	34	35	36
V	4.96	4.96	4.96	4.96	1.57	4.98	2.12	2.12	2.05	2.05	2.08	2.08
PIN	37	38	39	40	41	42	43	44	45	46	47	48
V	2.08	2.08	2.08	4.97								

U106 BA4560D

PIN	1	2	3	4	5	6	7	8	9	10	11	12
V	4.83	4.83	4.80	0	4.80	4.83	4.83	11.8				

U107 TDA7073

PIN	1	2	3	4	5	6	7	8	9	10	11	12
V	0	0	0	0	11.89	2.49	2.49	0	5.9	0	0	5.9
PIN	13	14	15	16								

U108 TDA7073

PIN	1	2	3	4	5	6	7	8	9	10	11	12
V	2.49	2.49	0	0	11.7	2.49	2.49	0	5.7	0	0	5.7
PIN	13	14	15	16	17	18	19	20	21	22	23	24

U109 MPC7805

PIN	1	2	3	4	5	6	7	8	9	10	11	12
V	11.8	0	4.98									